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ON TORSION OF THE VAGINAL PART OF THE UTERUS AND THE UTERINE PORTION OF THE VAGINA IN PARTURIENT ANIMALS.

BY A. E. MACGILLIVRAY, BANFF, N.B.

THIS is a subject of paramount importance to the country practitioner, and the profession ought to feel very grateful to Fleming and Cunningham for their interesting writings on this abnormality during parturition. It most commonly occurs in the cow, but I once met with it in a small terrier bitch, and Lewis, of Barnet, records an interesting case in a Cheviot ewe. But whether in cow, ewe, or bitch, I consider it so serious a complication as to render it utterly unnecessary for me to offer any apology for again bringing it before the profession.

During the last nine months I have met with no less than three cases in the cow, of this peculiar torsion, and my chief reason for referring to the subject is that I wish to explain the *modus operandi* by which I got rid of the abnormal twist in these cases. I am quite aware, from practical experience, of the value of the "rolling" system, as recommended by Fleming and so successfully carried out by Cunningham and Lewis, but at times this rolling, owing to patient's surroundings, will be found almost impracticable, as it really was in the first case in which I adopted the (what I call) *jamming* system.

I don't intend giving the particulars *in extenso* of the three cases referred to; suffice it to say that the plan adopted was the same in each, namely, on ascertaining the presence and the direction of the twist, and whether I had an anterior or posterior presentation, I at once proceeded to attach cords to the parts presented, which, owing to the contraction of the parts caused by the twist, is often a very difficult job. Having secured the necessary parts—as, for example, in my first case, which was a posterior presentation, the hind legs—I put severe traction outside on the cords and drew the

hind-quarters into the torsion until they were therein thoroughly *jammed*. I then endeavoured with all my power to turn the jammed hind-quarters in the direction of the twist; in this I was much helped by an assistant manipulating the calf's feet and pasterns, which were outside the vulva, in a similar direction. After a great many efforts, we succeeded in getting the calf's croup shifted from left flank to right flank of the cow, and with this change in the fœtal position, the utero-vaginal twist had wholly disappeared, and delivery at once followed with comparative easiness. The time occupied in this case was about one hour, while in the other two cases, which were anterior presentations, the time occupied in each was about two hours.

In anterior presentations, the great obstacle in this jamming process is getting the head and fore-feet, or rather part of them, *both* into the twist at once, which accounts for the greater length of time occupied. In my last case, about two months ago, I was nearly defeated, owing to having mistaken the direction of the torsion; on reversing my endeavours, however, the head slipped round most beautifully from right to left, and the twist was nowhere in a very short time.

I need scarcely observe that the chief object to be attained in this operation for utero-vaginal twist, is getting the fœtus, or part thereof, thoroughly *jammed* into the torsioned parts, so that the fœtus and the walls of the twisted portion of the uterus and vagina may be, as it were, *one*. Then, when the one (fœtus) is turned, round also goes the other (utero-vaginal walls) and, presto! the twist is gone.

Mr. David Crabbe, M.R.C.V.S., Aberdour, N.B., recently gave me the particulars of two cases of torsion in which he operated successfully by *jamming* the fœtus into the twist, and then turning, as above. Another friend of mine, Mr. Adam Sievwright, M.R.C.V.S., Tarland, N.B., sends me extensive details of no less than three cases in which he successfully adopted the rolling system. Mr. Sievwright is quite enthusiastic about Mr. C. Cunningham's cases, as it was according to Cunningham's details that Sievwright operated. Crabbe also gave me the history of a case or two in which he rolled his patients, and so accomplished delivery.

In all the cases which have come under the notice of either Sievwright, Crabbe, or myself, the poor patients had been from 24 to 36 hours *in calving before* we were called in!

In the case of the terrier bitch, I had to put her under chloroform, and secure the pups, one by one, with Breulet's tube and noose, before I could make anything of delivery. Only one of the pups and the mother survived the event.

NOTE ON ANATOMICAL INJECTION.

BY PROFESSOR LIMONT, GLASGOW VETERINARY COLLEGE.

THERE is virtue in a good recipe, and in these days we are apt to forget it. An extra ounce will move the waggon, and a very little change will sometimes make a useless formula work like magic. For instance, the difference in strength between the tinctures of iodine of the old Edinburgh and of the British Pharmacopæia involves one remarkable difference in action. The first, if used in a certain way, never fails to cure hydrocele of the human tunica vaginalis. The second, used in the same way, often fails. I wish to lay before the profession a formula that never fails.

There must be many who would like to work out for themselves such a subject as the blood supply of the horse's foot. I think I can tell them how to get an injection of the arteries without any difficulty. The method is the usual one, but the mass is used cold, and injected into the cold arteries. There is therefore no necessity to inject just after death, or to warm a part before beginning operations. In other words, there is no trouble or loss of time. Take: red-lead (dry), ½-lb.; sugar of lead, 1½ oz.; white lead, 2 lbs.; turpentine, 1 gill; turpentine varnish, 1 pint. Pound together in a mortar the red-lead and sugar of lead. Then thoroughly work in the white-lead with the pestle. Then gradually mix in the turpentine. Lastly (just before injection) mix in the turpentine varnish. This is enough to inject all the arteries of the human subject.

Anybody can inject with this mass the very finest vessels visible to the naked eye. It runs so easily that the usual caution to inject slowly may be nearly disregarded. One can dash it into all the smallest arterioles of a limb. Of course it must be used at once after adding the turpentine varnish, for it soon sets solid. There is only one difficulty, namely, to prevent escape from the mouths of small vessels. If the whole animal is to be injected from one artery, great care must be taken in making the incision into it. If a limb is to be injected after removal from the trunk, it will never do to tie the nozzle into the main artery, and inject after merely ligaturing the other vessels. The result would be an outpour from small vessels, reminding one of a street water-cart. A strong elastic band must be put round the limb just behind or over the nozzle of the syringe. It goes without saying that the limb must not he skinned. The beauty of this injection is that if it is sent into the big arteries it always goes into the very smallest. The result is that we get a vivid view of the real vascularity of a part. Its bright salmon-pink stands up well against everything. This formula was worked out by the late Mr. Carter, of the Western

Medical School, and used by him for several years. He told me that it had never once failed. And certainly it does not fail with us. I think it is a modification of the mass used by a well-known Edinburgh anatomist. His, however, is sometimes not satisfactory. Mr. Carter (like his rivals) kept a good thing to himself when he got it, and would not let out its composition. However, some time before his death, he gave the formula to us, on the understanding that it was not to go further than the Glasgow Veterinary College. I now publish it, because I think it may be useful in a profession free to dissect in private.

POISONING IN CATTLE BY THE *ŒNANTHE CROCATA*, OR WATER PARSNIP.

BY E. WALLIS HOARE, M.R.C.V.S., CORK.

THE following cases may be of interest to readers of the VETERINARY JOURNAL. On January 13th, I was called to attend some cattle about four miles from town, reported to be suffering from some form of poisoning.

On arriving I found that two cows had died in a short space of time, and that a third was in a very critical condition, presenting the following symptoms—abdominal pain, slight purging, accelerated respirations, pulse quick and weak, bloodshot eyes, with pupils largely dilated, frothing from the mouth, and constant bellowing; there was great tenderness on pressure over the loins, and a gradual want of power in the hind extremities.

To this animal I administered a dose of R. opii and Ol lini, also enemas of warm water, and after some time, as the animal seemed to become weak, I ordered Oss of whisky. This treatment was to be repeated if necessary.

The remainder of the cows, about twelve in number, had been removed to their stalls. The pasture was close to the bank of a river, and had recently been covered by a heavy flood. In the hollows of this field, and close by the ditches, there were large quantities of roots, some having small leaves sprouting, resembling parsnips, the majority having the remains of last year's growth, such as dried stalks, etc. These roots had evidently been some time in the water, as there was very little juice to be found in them; some appeared in pairs, others consisted of a collection of small tubers.

The remainder of the cattle showed as yet no symptoms, but I deemed it prudent to order a dose of mag. sulph. for each. Shortly after I left, about five of the animals showed commencing symptoms, viz., frothing at the mouth, bloodshot eyes, dullness, etc.,

and the owner administered the purgative medicine, which had a beneficial effect, as by next morning all the animals were well, including the case which received treatment at first. I made a careful *post-mortem* examination of the two cows that died.

From the owner's description, these animals had presented very violent symptoms prior to death, running about in a wild manner, falling on the head, ending in complete insensibility. The animal most recently dead I found in an outhouse. The carcase presented great rigidity of the limbs and jaws, bloodshot eyes, and a great deal of froth and fluid issuing from the nostrils.

The oral cavity presented signs of irritation, the lungs were slightly congested, the rumen contained a large amount of portions of roots, having a very rank odour, and resembling in every way the roots on the pasture.

The mucous membrane of this organ appeared softened and easily separable from the muscular coat. The abomasum showed a slight degree of inflammation, as also did the small intestines. The whole alimentary canal possessed the rank odour of the roots.

The second cow's body I found in the field. The same appearances were presented as in the first one, but the inflammation of the abomasum and small intestines was very severe, and the rumen contained even a larger amount of roots than the first. At my leisure I examined the brain and part of the spinal cord of the first cow, and found congestion of the vessels of the brain, and also congestion of the coverings of the spinal cord.

I may mention that on reading up the subject afterwards I found that similar *post-mortem* appearances were recorded in cases of poisoning by this plant in human beings. In "Husband's Forensic Medicine" the *post-mortem* appearances stated are "Congestion of the vessels of the brain and gastric irritation." The symptoms recorded are "those of delirium tremens," vomiting of blood, convulsions, first contraction and then dilatation of the pupil, spasmodic respiration, and an almost imperceptible pulse.

Finlay Dun, in his "Veterinary Medicines," states that the leaves of the *Œnanthe Crocata* are also poisonous, and he gives an instance where forty-three cattle were poisoned by eating the fresh leaves of this plant.

He also states that this plant has similar physiological actions to the *Conium Maculatum*. But according to the results of experiments, the brain is only secondarily and indirectly affected in poisoning by the latter; whereas in poisoning by the *Œnanthe Crocata* the delirium, convulsions, and coma, quickly appearing, point to the brain being directly affected, and the *post-mortem* results confirm this opinion. I may remark that in the roots which

came under my notice in the above cases there was an absence of that yellow fœtid juice which is described as being present. This probably occurred from the length of time they had been soaking in the water, an opinion which the botanist to whom I sent some of them, to be certain of their identity, also entertained.

REMITTENT FEVER IN ANIMALS.

BY R. W. BURKE, M.R.C.V.S., A.V.D., JUBBULPORE, INDIA.

If we may judge from our experience of the past two or three years, it is apparent that the aims of veterinary science are progressive. The spirit of inquiry into the nature of diseases is penetrating beyond the description of naked-eye appearances. It is largely concerned now with etiological considerations—a long step in advance of the once fashionable study of mere symptoms of disease. An important departure in veterinary research has been the investigations into the nature of fevers common in our animals. Not one of the least important contributions to the study of fevers is that by Mr. Nunn, which recently appeared in the Veterinary Journal. Mr. Nunn shows from Africa, what we have for some time held—both through these columns and elsewhere—to be practically true in respect of India, viz., that "Malarial" or Remittent Fever is a very common affection in the horse, and that in this animal it often *complicates or accompanies other maladies*, as, for example, Anthrax Fever, and is frequently mistaken for the latter. We have already referred to the important researches of continental veterinary surgeons on this subject; and equally important contributions are those which have emanated from our own country, but especially those of Dr. Fleming on equine and canine forms of Intermittent Fever seen in China and adjoining countries. The paper by Mr. Nunn, just published, is an important contribution to the literature of this subject, especially as it may awaken interest in the study into this relations of this fever with other specific diseases, but especially Anthrax in the horse.

It only remains for us to say a word on the subject of the prevalence of the fever as we have met with it, and described it, in this country, since looking for it during the last few years. For the details, we may refer to our supplemental report on Anthrax Fever in Meerut, our Equine Diseases of India, and other papers written since. The views which Mr. Nunn has enunciated in the Journal since our former articles were written, only inspire us with a desire to assist in any consideration of this subject, which may give a stimulus to future investigators, and make our experience more representative of general opinion.

In dealing with this subject, I can only repeat the assurance, now that the question has been brought before the profession, that strenuous efforts will be made in the future to do justice to the consideration of simple fevers in animals, equally with those of a specific nature. It is impossible *always* to win adherents to any new subject, but we trust the influence of other members in England will, like that of Mr. Nunn above mentioned, be energetically and usefully employed on behalf of this inquiry, whether practical or scientific. The material in hand is almost at every one's command, especially in this country, and affords the assurance that there will be no lack of inclination on the part of veterinary surgeons serving in India, and that contributions from their pen will be forthcoming in the present year, to facilitate the views and experiences which we have presented to our readers. And it is interesting to note that, notwithstanding the difficulties we had to experience in overcoming opposition at the first, members of the medical profession serving in India have pursued with unvarying firmness the policy of progress in science, which has been influential in demonstrating how, in hot climates, Remittent Fever may be mistaken for specific diseases—especially Typhoid Fever—in man.

The experience of medical men serving in India has shown that not unfrequently it terminates in Typhoid Fever—the same as in Anthrax seen in our animals; for Remittent Fever is no bar to other specific diseases—especially Anthrax in animals—and often co-exists with the latter, as I showed in the late Meerut outbreak of 1886-7. *The symptoms presented during life, the temperature charts, the post-mortem changes, as well as the characters of the organism found in the blood, all point to Remittent Fever in the horse.* Moreover, such a careful investigator as Mr. Nunn has published in the Journal his cultivation experiments, and results of inoculation in different animals, which all yield results that should prove encouraging to other investigators. The conclusion arrived at by Mr. Nunn is not very definite, but a new and hitherto undescribed (?) organism is reported to have been constantly found in the blood of animals suffering from this disease; whilst the clinical features of the disease, with the *post-mortem* characteristics, etc., are promised re-consideration next year. It may be added that the practical value of the bacillus met with in the African form of this disease, as seen in our own cases, as a means of diagnosis of Remittent Fever has been successfully tested by continental writers—both medical and veterinary—in many former outbreaks. The relation of the bacillus to the disease has been much criticised in various journals, although its presence as a diagnostic test is admitted on all hands. We wish Mr. Nunn

every success in his investigations in South Africa, and hope soon to have corroborative evidence from his pen with reference also to the other features of the disease we have above enumerated.

Somewhat allied to Anthrax, and showing the close connection that sometimes subsists between it and Remittent Fever, is Typhoid Fever, which kills so many young soldiers in almost every station in India.

NOTES ON TETANUS.

BY A. M. CREIGHTON, M.R.C.V.S., LISBURN.

MUCH has been said and written concerning the contagious nature of Tetanus, and it is of great importance that we, as a body, should try to elucidate facts concerning any given disease; and this one in particular, as it is fatal in a great many instances. A recent case that I have had under my treatment I will give the particulars of.

I was called to see a black gelding, seven years old, on September 9th, 1887, and the history of this case is as follows:—The animal had been in a cart the day previous, removing stones out of a field; the weather was very cold, with snow showers, and stormy. When he was brought in at night he did not show any signs of disease, but in the morning he could not open his jaws to take in food. The stable was well ventilated, but a little draughty; the animal stood in his accustomed stall, with four other horses in the stable that night. The day being very cold with snow showers, the temperature became reduced below the freezing point, so that the cold freezing air passing in through the stable (the animal having been sweating throughout the day) may have caused the disease.

The diet he got was the same as the others received, and was carried to it in the same bucket (the bucket many a time not *cleaned* of the saliva from the diseased horse) before the healthy ones were fed. This animal also stood in the same stall during convalescence, and none of the others took the disease, and there has not been a single case in the neighbourhood since. This fact does not go to prove that Tetanus is contagious. I visited him daily, giving him medicinal treatment till October 4th, 1887, when he got well, and has been working every day since. In this case the jaws were very firmly locked, so much so that I could scarcely get in a shilling between them. I attribute this case to the cold the animal stood out in during the day, and also the coldness of the weather that night and the draughty stable. There was no wound on the body.

Another case I had under my notice was that of a grey mare, eight years old. In this case the saddle-pad had become low, and

the back had got injured by the framework of the pad, a wound being the result. I treated this animal in the same way as the first, attending to the wound with antiseptic dressings. This animal died. Before this case appeared there had not been one in the locality for a long time, and there has not been one since near the same place, and that is sixteen months ago. Another animal has stood in the same stall for the above-mentioned period, and never showed any symptoms of Tetanus. The stall was not disinfected when the mare died, nor were any precautions taken to guard against the supposed contagious nature of Tetanus; and the animal that has stood in it for sixteen months at the time of writing this, has no signs of sickness of any kind. This latter case also tends to prove that Tetanus is not a contagious disease.

THE URINE IN AZOTURIA.

BY R. SHENTON, M.R.C.V.S., BELPER.

HAVING seen in the journals that there is at the present time a divergence in opinion as to the nature of the urine in the disease designated Azoturia, and, having recently had a case, a few observations on the point *in disputatione*, as well as a brief account of the case, may not be altogether uninteresting to the readers of the VETERINARY JOURNAL.

On the 18th of last month I was called in to see a horse, the property of a Mr. Meddings, who resides a short distance from Belper, but being unfortunately out at the time, another man's services were called into requisition. The next morning, however, the owner again came for me, saying he was anxious that I should see the case, and, in compliance with his request, I went, and found the horse to be suffering from Azoturia. I ascertained that he had had some extra rest previous to his being brought out on the day he was attacked; that the owner had pretty good grounds for believing the boy, whose duty it was to look after him, had been giving *rather* more corn than was usual, and that on being brought out he went very well, but after having gone a considerable distance, he began to stumble, and finally dropped down helpless.

He was in a loose box sweating profusely, and dashing his head about in a most dangerous manner; indeed, I ordered his head to be secured by means of a halter, otherwise he would most certainly have inflicted upon himself further mischief. The chief symptoms, besides those alluded to, were: pulse 80, small in volume, conjunctival membrane deeply injected, temperature 104°, gluteal and other muscles of the hind legs in a state of tonic spasm—as

hard as a board—and the urine high coloured, and dribbling away incessantly. Although it was undoubtedly a bad case, yet the appetite remained tolerably good.

The chief point of interest in the case, to me, was the analysis of the urine, and whether *urea* or *albumen* was the product to be found in greater abundance; consequently, I took pains to test it carefully, and immediately it was passed. The result, on the addition of nitric acid, was that I obtained a large quantity of the crystals of nitrate of urea, thus verifying the statements of Professor Williams, and differing from those of Dr. McFadyean.

Afterwards, however, it occurred to me that *it is possible* that sometimes *urea* and sometimes *albumen* may be the constituent present in excess, the presence of the one or the other depending upon the extent to which the oxidation process has been carried on. I wrote to Professor Williams, asking him if it were not possible that, in those cases where the animal is struck down almost immediately it comes out of the stable, and where, as a consequence the oxidation process has not been so completely performed, *albumen* may be present; while in those cases where the animal has travelled a considerable distance, thus allowing of the more complete performance of the oxidation process, *urea* may be found. To my letter, containing this suggestion, Professor Williams kindly replied, stating that my conclusions were "justifiable and worthy of further investigation."

As this is a matter of considerable interest, I hope the readers of the VETERINARY JOURNAL will not fail to take advantage of investigating the point in question, and should anyone desire further information on the above case, I shall be only too pleased to furnish it.

INOCULATION FOR PLEURO-PNEUMONIA.

BY J. D. POTTIE, M.R.C.V.S., PAISLEY.

As there has been a good deal both written and spoken about this important subject, I intend here to give a brief account of my visit to a dairy farm where the disease had broken out, and where some of the cows had been inoculated.

The farmer told me he had in all thirty-three dairy cows, three of which he had bought in at the market, and they looked very dull after a time; so he thought something was amiss, and sent for his veterinary surgeon, who told him it was his opinion that three of his cows were affected with Pleuro-pneumonia, and the other two he suspected.

After the usual lawful course, the three first-mentioned cows were killed, and the remainder of the stock, except the two suspected cows, were inoculated.

On making a post-mortem examination, the three affected cows were found in an advanced stage of Pleuro-pneumonia. In five days, the two suspected cows were also killed, and found to be affected with the disease.

It is thus plain that the two suspected cows remained in the midst of the inoculated animals for a long enough time to infect them, and so test the inoculation. The remaining twenty-eight inoculated cows are all healthy, milking and eating well, with five new cows standing in their midst.

One thing that strikes the eye when you enter an inoculated byre, is that you see that a number of the cows have lost, or partly lost, their tails; but this is no argument against the breeding capabilities of these animals, and I think it will be a long time before their offspring lose their tails. Neither is it an argument against their show qualities, at least as far as fat cattle are concerned; as at some of the recent fat cattle shows a number of the prize-winners were inoculated, and minus a tail, one of them having first place. They may fatten as well as, if not better than, other animals in winter, and also in summer, if a little tar is smeared over the skin to keep off the flies. It is, I think, evident that twenty-eight cows would have been slaughtered, or at least died, which would have cost the local authority of that place above £150, but which were saved. I think the veterinary surgeon in a case like this should get the thanks of, or even a little compensation from, the local authority. The fact also remains, that inoculation is beneficial, at least in large herds, and prevents, if it does not arrest, the ravages of this deadly disease.

EQUINE GLANDERS.

A Resume of Facts and Observations relative to the same.

BY F. C. MAHON M.R.C.V.S., SOUTHSEA.

(*Continued from* p. 93.)

That Glanders is hereditary is to be questioned, though, reasoning from analogy, it appears worthy of further study. The tracheal lesions are met with occasionally, and point to a prolonged course of Glanders infection and activity.

A peculiar and well-marked outbreak of Eczema had previously, and subsequent to the outbreak, been noted. The food being chiefly maize and chaff, with prolonged severe work, no doubt proved the main cause. Is it rational to connect the propagation of the outbreak with absorption of virus through the denuded patches of skin ?

A period of three months elapsed from the first appearance of Glanders in the mare to the outbreak among the others. This would point rather to atmospheric sources as the medium of conveyance of the virus. In direct inoculation it is usually from four to seven days, or even longer, before marked changes are visible; that of infection, mediate or immediate, it is somewhat longer ere the diagnostic symptoms are developed. In these cases an interval of some weeks or months ensues from the reception of the morbific agent to the development of any characteristic symptoms.

These periods of incubation are not of actual occurrence; they are rather to be considered as being due to the virus being volatile, and acting primarily on the blood and internal viscera, and according as the animal is in good health, comfortably stabled, and every attention paid to general surroundings, the disease assumes a slowly progressive and insidious form. It is beyond doubt from following too closely old usages, adopting certain fixed principles in contagious and infectious diseases, that the serious and oftentimes peculiar and exceptional cases are overlooked.

Fixed symptoms must not be the barrier for enlightenment, and the suppression of outbreaks of Anthrax, Tuberculosis, or above all, "Equine Glanders." As an instance, I may without prejudice record the case of a horse with Chronic Glanders—*Glanders-Farcy* well pronounced, the patient supposed to be affected with a prolonged cold, and apparent recovery from Influenza. A more typical case of Glanders-Farcy could nowhere be found, yet for five months he was kept to prove how doctors differ, and the public very often have the satisfaction of detecting what the veterinary surgeon could or would not. Indurated sub-maxillary glands, knotty, three in number, the parotid of the left being circumscribed in appearance, œdema of throat, laboured breathing, sanious discharge at intervals from the nose, unthrifty coat, sweats diffused over sides and limbs, renal disturbances, œdema of the sheath, haggard looks, emaciation progressive, cough at times, pallor of mucous membranes, specific ulcers in both nostrils, anæmic murmurs both of heart and lung, consolidation over left well marked at the base, right lung in patches; when taken out to exercise marked dyspnœa; injected conjunctivæ, dilated nostrils, and other symptoms too numerous to be mentioned. Destroyed at last; even then a refusal to believe it glandered. The obvious lesson, not soon to be forgotten. The *post-mortem* examination revealed Chronic Glanders (Glanders-Farcy), and in the opinion, unsolicited, of the knacker, the worst case he had seen in twenty years of horse-slaughtering.

Repute counts for little; it is the close contact which one gains

in our large cities, and amid large establishments of horses, which bears favourably with the, comparatively speaking, few found now and then in the country, which alone admits of correct judgment.

Due attention to sanitary science, a more correct diffusion of knowledge to the daily requisites of animals, improved dwellings erected on correct hygienic and sanitary principles in open localities, provided with the best means afforded by experience of egress of all fluids and gases inimical to animal health, is requisite and beyond doubt, if we would advance a step nearer the conquering of a dire and powerful foe. The institutions now chiefly devoted to bacteriological research have much to unravel in the germ peculiar to the malady, so as to secure by inoculation, after cultivation of the virus, immunity or amelioration.

The following appear to be the chief facts, gathered from the outbreak on which so much of this paper is centred, and which are strengthened by a study of other outbreaks and cases hitherto witnessed.

1. That an average temperature of 102½° Fah. is consistent with Chronic Glanders when the constitution, supported by medicinal stimulant treatment and natural stamina, is strong.

2. That an exalted temperature, with defective food supply of non-nutritive qualities, and fatiguing work, with rapid loss of sweat, renal activity, and defective sanitary and hygienic arrangements favour the development of Equine Glanders, when the system is impregnated by the virus.

3. That, as is well known by experiment and deduction, further debilitation of the system by exhausting the vital powers, *i.e.*, non-support of affected subjects in the chronic stages by stimulants, and lowering vitality by purgative agents, aggravates the complaint, and often produces structural changes without actively interfering with the temperature, beyond, on the average, half a degree.

4. That the appetite is good in advanced stages of Glanders when the structural changes are fixed and not progressive, and when the organs of organic life are not too *deeply involved.*

5. That Pneumonia of Glanders proves the least favourable for detection, and existing for a lesser or greater period often excludes further observations; in a few instances it escapes serious attention and causes the most extensive losses.

6. That isolation for a stated time of a suspected case, with every precaution, admits of the further extension, if contact has previously existed with others, or that the isolated case was primarily and truly the receptacle of the virus of Glanders, the animal system proving amenable to its further progress.

7. That mares, taking an average, are less often the victims than horses or geldings, the like being applicable to donkeys.

That the recent observations of Dr. Kransfield, following the statements of Löffler, go far to show that the activity of propagation takes place when, by death of the bacilli, spores are evolved by the channels of excretion, kidneys, skin, etc. The experiments on guinea-pigs, in which death was due to Glanders, revealed, on *post-mortem* of the horses from which the virus was taken, the same complaint.

That we are on the right road toward elucidating Glanders must be admitted by the experiments of Kranzfield, who records a case where Glanders was not supposed existent, and the nasal discharge examined, the typical bacilli of Glanders was found. Further experiments are needed in this direction and the bacilli studied more closely, ere with confidence and good result we can carry out further preventive measures towards its mitigation and suppression. The malady is one requiring our utmost care in dealing with it, and also on our part close contact and experience to cope successfully with it.

That Diabetes oftentimes accompanies Glanders, more oftentimes Farcy. The repute that Glanders follows on an attack of Diabetes, affords good ground for belief that the systemic weakening affects the growth and development of Glanders, ever associated with exhaustion and climatic debilitating influences.

Editorial.

VETERINARY EXAMINATION OF HORSES AS TO SOUNDNESS.

Among the most important duties which are imposed on members of the veterinary profession, is that of giving an opinion as to the soundness of horses, which of course means their freedom from disease or defects that may impair their usefulness, either presently or prospectively, immediately or remotely. Definitions of what constitutes soundness or unsoundness have been attempted, but the best of them are perhaps imperfect, and, therefore, more or less unsatisfactory; and if we might judge from the opinions given in the law courts and elsewhere, one might almost infer that veterinary surgeons were not always agreed among themselves as to whether certain conditions do or do not constitute what may be regarded as coming within the meaning of the term. Nay, and worse still, litigation not unfrequently demonstrates that very prominent members cannot agree as to whether an abnormal condition which would render a horse unsound really exists. If such disagreement were owing to the obscurity of the condition, to the supposed defect being located beyond the reach of ascertainment by hand and eye, then the divergence might be excusable on the ground of difficulty; but when the source of contention is accessible to eye, ear, and hand, then the affair is less likely to be viewed favourably by the lay world. When the dispute is as to whether a spavin, a splint, or a cataract is or is not present, then the public are not likely to place much reliance on the skill of experts; for these abnormalities, if they are obvious to one practitioner should be so to another. A spavin that can be felt can also be seen, and there should be no doubt as to its presence or absence. Yet how often has it happened that some veterinary surgeons have sworn to the existence of this exostosis on a horse's hock, and others have averred that the articulation was perfectly healthy. And how often has it not also occurred that horses have been condemned as unsound, because they had what the inimical experts called "coarse hocks"—joints which, in reality, were the opposite of defective.

It can scarcely be denied that the diversity of opinion often entertained by veterinary surgeons, not only as to what constitutes unsoundness, but in many cases as to whether recognised causes of unsoundness are at all present in horses certified to as having them, brings discredit and loss of confidence in their knowledge. It only too often happens that there is a tendency by some to carry unsoundness notions too far, and perhaps in others to consider them too lightly. Mistakes and oversights may occur in examining horses, as in other affairs; but surely there should exist no doubt in disputed cases as to whether a horse is lame, spavined, or diseased in its eyes or in any other part which can be seen or felt. It is such contentions which bring ridicule upon experts and damage their reputation. Surely such mishaps might be to a very great extent,

if not altogether, avoided. An agreement might also be come to as to what really constitutes unfitness for work in horses—for such is the meaning of unsoundness. A horse may be unsound for one purpose and not for another; for instance, a stallion may be unsound for racing or hunting, through strain of tendon, fracture or other accident, or even from Laminitis caused by over-exertion or otherwise, and yet be sound for stud purposes. To condemn the animal because it would be likely to beget unsound stock through these defects, would be as reasonable as to assume that a man with a wooden leg would probably have children with wooden legs.

Thousands of horses do sound service for years which would not receive certificates of soundness from many veterinary surgeons; and very many are rejected as unsound which have never been "sick or sorry," as the saying is.

The question of unsoundness, and especially hereditary unsoundness, is one that demands serious consideration by veterinary surgeons, and a re-examination of the subject appears to be absolutely necessary, in order to ascertain how many of the ideas pertaining to it rest on tradition or fancy, and not on substantial fact. It is well to get rid of sentiment and theory when dealing with a matter that involves such large and serious interests, as those connected with horse production and utilisation.

SYNOPSIS OF A PAPER ON PREVENTIVE INOCULATION FOR SYMPTOMATIC ANTHRAX OR BLACK-LEG.*

BY PROF. TH. KITT.

PROFESSOR KAUFFMANN, of Lyons, was kind enough to send me a quantity of No. I. and No. II. Blackleg vaccine, in four parcels, each containing twenty doses. The material was employed as follows:—

I. Twenty doses of vaccine No. I. (which consisted of a dark brown powder) were mixed with sterilised water in a sterilised mortar. A few drops were used to inoculate fluid-nutrient gelatine and some test tubes for plate cultivations. The remainder, which contained some undissolved particles, was drawn into a sterilised syringe, and inoculated into the following animals—

1. A white sheep 2. A black sheep	2 cubic centimetres.
3. A young guinea-pig 4. A young guinea-pig 5. An old guinea-pig	1 cubic centimetre.
6. A sparrow 7. A canary 8. A white pigeon 9. A black pigeon 10. A white mouse	1 drop.

During the operation the precautions recommended by Arloing, Cornevin, and Thomas were observed.

In this manner each sheep received four times the dose which is stated by Arloing, Cornevin, and Thomas to be sufficient to produce immunity.

* Translated by F. Raymond, F.R.C.V.S., F.R.M.S., F.R.G.S., Army Veterinary Department.

The last drops were used for microscopic examination, and were found to contain the characteristic bacilli of Symptomatic Anthrax, with spores. The artificial cultivations, although under observation for three weeks, showed no contamination. The bacilli did not grow; this, however, is not necessarily proof that they were dead, but may refer to their biological peculiarities. The smaller animals (Nos. 6-10) suffered in no way from the inoculation. During the eight days they were under observation, the temperature of the sheep varied from 39·0° C. to 39·3° C. The local swelling was very unimportant, and vanished in twenty-four hours.

II. To test vaccine No. II., ten doses were rubbed down with water, and the resulting reddish-brown fluid was injected into the following animals:—

11. A brown ewe	½ a cubic centimetre.
12. A white lamb	1 " "
13. A young guinea-pig	½ " "
14. An old guinea-pig	
15. Two sparrows	1 drop each.

The rest was tested microscopically, and showed the presence of bacilli of Symptomatic Anthrax, with spores. Artificial cultivation demonstrated the purity of this sample.

All the animals inoculated with vaccine No. II., without prior inoculation with vaccine No. I., remained perfectly healthy; the temperature of the sheep varied from 38·9° C. to 39·3° C.

The secondary inoculation of both batches was carried out fourteen and ten days respectively afterwards, as follows:—

III. On the 18th August ten doses of No. II. vaccine were mixed with three grammes of water and injected as follows:—

The white sheep No I. (1 c.cm.) The black sheep No. 2 (1 c.cm.) The young guinea-pig No. 3 (½ c.cm.) The old guinea-pig No. 5 (½ c.cm.)	All these had been inoculated with vaccine No. I. on the 4th August.

Guinea-pig No. 4 had died of Pneumonia in the meantime.

IV. On the 20th August twenty doses of No. II. vaccine were mixed with five grammes of water, and four grammes were used as follows:—

The brown ewe No. 11. The white lamb No. 12. The young guinea-pig No. 13. The old guinea-pig No. 14.	1 c.cm. each	These had been inoculated on the 10th August with vaccine No. II.

During the next two days the temperature of the ewe and of the lamb went up 0·2° C. The lamb (inoculated in the leg) was very lame, and on the 21st inst. there was a diffused swelling in the neighbourhood of the puncture. On the 23rd the lameness and swelling disappeared. The guinea-pigs had a slight swelling round the puncture, and also went lame.

It will, therefore, be noticed that the protective inoculation, with attenuated virus both No. I. and No. II., when used in unusually large quantities, does not produce important pathological phenomena in sheep or guinea-pigs. I was unable by this method to discover the difference in virulence between the two vaccines.

On the 4th September I undertook control inoculations with virulent material—that is fourteen and sixteen days respectively after the inoculation with No. II. vaccine.

The following animals, supposed to have been rendered immune, were inoculated :—

Sheep No. 1 „ No 2 Guinea-pig No. 3 „ „ No. 5	Had been submitted to vaccines Nos. I. and II.
Ewe No. 11 Lamb No. 12 Guinea-pig No. 13 „ „ No. 14	Had been submitted twice to vaccine No. II.

For control the following fresh animals were employed—a grey sheep, a white sheep, a young and an old guinea-pig.

I had received in the summer of 1885 some flesh from a spontaneous case of bovine Symptomatic Anthrax. Some of it was dried and bruised in a mortar with twenty c.cm. of water. Each sheep received one c.cm. hypodermically of this material, and each guinea-pig one-half c.cm.

The result was as follows :—The temperature of the grey control sheep, which before inoculation had been 39·0° C., was 40·3° C. on. the 5th Sept., 39·6° C. on 6th, 38·7° on the 7th. It had a tumour near the puncture on the leg, and was very lame. On the morning of the 7th it was dull and ate little. In the afternoon a sanguino-bilious mucus was discharged from the anus; the extremities were cold and the respiration 60. It groaned and grated its teeth continually, and on the morning of the 8th was found dead. The white control sheep died also, showing similar symptoms, on the afternoon of the 8th. All the other sheep supposed to have been rendered immune showed reaction. On the 5th September their temperatures went up to 40° C.—the brown ewe to 41·0° C., the black sheep 40·6° C. The brown ewe died on the morning of the 7th September. *Post-mortem* examination showed hæmorrhagic œdema of the sub-cutis and muscles widely spread round the seat of inoculation. Bloody serum ran from the cut surfaces, and gas in small quantities was found in the muscular structure, which was softened and tumefied. Microscopic examination demonstrated the presence of bacilli of Symptomatic Anthrax. Œdema bacilli were found in the liver only. From this sheep two guinea-pigs and four mice were inoculated. The guinea-pigs died on the 8th inst. of Blackleg, and the mice remained healthy, thus proving that the Œdema bacilli were not the cause of the death of the sheep.

The other three sheep (Nos. 1, 2, and 12) were dull for two days after inoculation, but soon regained their normal condition. An abscess formed at the seat of the inoculation, which burst, and in two cases discharged caseous pus, and in one a bloody, serous fluid. As regards the guinea-pigs, Nos. 3, 5, and 14 were found to have been rendered immune by the former inoculation, and one (No. 13) died of Symptomatic Anthrax on the following day.

Notwithstanding the deaths of two of the subjects of protective inoculation —a sheep and a guinea-pig—the results were perfectly satisfactory, and supported the statements of Arloing, Cornevin, and Thomas as to the efficacy of protective inoculation for Symptomatic Anthrax. It is particularly interesting to find that guinea-pigs, which are exceedingly susceptible to Malignant Blackleg, were rendered immune.

The two fatal cases are not of primary importance in considering the practical utility of protective inoculation, because the animals employed do not belong to the species for which the method is intended; and, again, the doses were not those usually recommended, and were used merely for my own satisfaction, to ascertain whether large doses of attenuated virus were dangerous to life, and to see if a mild attack of the disease would confer immunity. In fact, the results were more satisfactory than I expected.

I regret that I was unable to ascertain if the guinea-pigs remained immune against further inoculation, because an attendant mixed them with a great number of others, and they could not be identified; but the three sheep (Nos. 1, 2, and 12) were again inoculated on the 15th October, 1886, from virulent material, as well as three control guinea-pigs. On the morning of the 16th all the guinea-pigs were dead (of Blackleg). The temperature of two of the sheep went up on the 17th (No. 1 was 40·5° C. and No. 2 was 40·5°). No. 12 remained 38·9° C. on the 16th and 17th inst.

On the 17th October I received some fresh flesh from a virulent case of Bovine Blackleg, and undertook a forced control experiment by re-inoculating the subjects (Nos. 1, 2, and 12) of the experiment of the 15th, and also a young lamb as control.

The lamb died of Blackleg during the night of the 18th. The sheep remained healthy, excepting the local swelling.

As a further test, Nos. 1, 2, and 12 were again inoculated with virulent material on the 18th January, 1887, and three strong, healthy sheep were used for control purposes. The result will be found below.

	Temperatures of Protected Sheep.			Temperatures of Control Sheep.		
Date.	Sheep 1.	Sheep 2.	Lamb 12.	Grey sheep.	Black sheep.	White sheep.
Jan. 18	40·0	40·2	38·8	40·3	39·8	39·7
„ 19	39·8	39·0	38·8	39·5	41·6	41·2
„ 20	38·7	39·0	39·3	Died on	Died on the	40·5
„ 21	39·6	39·4	38·9	19th Jan. in	20th Jan. in	Died on 21st
„ 22	38·8	38·8	38·5	the evening	the morning	Jan. in morn.

An additional argument in favour of protective inoculation is to be found in the fact that, as far as is known at present, animals under its influence do not convey Symptomatic Anthrax to others, neither do they infect pastures, stalls, etc., by their evacuations.

REPORTS ON THE OUTBREAK OF RABIES AMONG DEER IN RICHMOND PARK DURING THE YEARS 1886-7.

The following reports on Rabies among deer will doubtless prove of interest to our readers. In bringing them to the notice of the Lords of the Committee of Council for Agriculture, Prof. Brown, C.B., remarks:—

In the spring of last year (1887) my attention was called to the existence of a fatal malady among the deer in Richmond Park by Mr. Lupton, the Veterinary Inspector of the district, and from his description of the symptoms which he had observed I was led to suspect that the disease was Rabies, a suspicion which Mr. Lupton shared. At my request two diseased animals, a buck and a fawn, were sent to the Royal Veterinary College, and it did not require much observation of the behaviour of these animals to convert the suspicion into a strong conviction. The question was, however, too important to be permitted to rest without a positive answer, when the means of resolving the doubt were within reach. Accordingly, I forwarded the necessary portions of the diseased organs of the deer, which died soon after admission to the College, to Prof. Victor Horsley, in order that he might apply the crucial test of inoculation; and at the same time I instructed the Chief Inspector of the Department, Mr.

A. C. Cope, to make an inquiry into the circumstances under which the outbreak occurred. Mr. Cope's report furnishes a complete history of the case.

In reference to the means by which the virus of Rabies was conveyed from the diseased to the healthy deer, Mr. Cope's observations are conclusive, as they place beyond doubt the fact that rabid deer did attack and bite their companions. This circumstance explains the long continuance of the disease in the herd.

Generally among herbivora, cattle and sheep, which are most often the subjects of Rabies from the bite of a rabid dog, the disease ceases with the death of the animals which were bitten. But in the instance of the deer it appears that the animals became extremely agressive when suffering under excitement.

Prof. Horsley's report is a valuable contribution to the literature of the subject, and illustrates the importance of experimental research in dealing with problems in pathology. It may now be asserted without hesitation that the obscure disease among the deer was Rabies, and in any future outbreak the mere observation of the symptoms exhibited by the diseased animals will, in the light afforded by Prof. Horsley's experiments, be sufficient to enable the observer to form a correct opinion as to the nature of the malady.

MR. A. C. COPE'S REPORT.

It has long been known that Rabies can be communicated to nearly all warm-blooded animals by natural or artificial inoculation.

In France, where the statistics of Rabies are very carefully compiled, and where more cases of the disease are reported than in any other country in Europe, 1,539 dogs, 39 cats, 99 cattle, 13 horses, 11 sheep, 9 swine, 1 mule, and 1 goat were returned affected in the twelve months ended July, 1887; no mention is, however, made of deer in this list, and from a letter which I have received from M. Cagny, Secretary to the Central Veterinary Medical Society in Paris, it appears that there is no record of this disease having been recognised among deer in France.

In Germany also the disease is very prevalent, 438 dogs, 5 horses, 92 cattle, 32 sheep, and 72 swine were reported affected in 1886, but here again no mention is made of Rabies among deer.

In a letter which I have received from Prof. Müller, of the Royal Veterinary School at Berlin, he states: "I know nothing about outbreaks of Rabies in deer in Germany. I have asked the Professors of our institute, and have received the same answer. I find in the German literature a remark about epidemics of Rabies among foxes in the years 1823-26, and a notice that some cases of Rabies have been observed at the same time among deer. I have sought information from the Professors of the Academy of Foresters, but there is nothing known about Rabies among deer. Nobody remembers a single case of Rabies among deer. I am convinced that deer can become affected with Rabies when bitten by a mad dog or by a mad fox as any other animal belonging to the mammalia. But such a disease must occur very seldom, because deer are very much inclined to take fright when a dog is near, and escape biting by their fleetness. I therefore doubt the possibility of a large number of deer falling ill by Rabies at the same time. But the circumstances may be different in England, where deer are living, if I am rightly informed, mostly in parks in a half tame condition, and not in forests as in Germany. I am not aware that any case has been observed with certainty in which Rabies has been transmitted from herbivora to herbivora, and I cannot think that deer will bite."

It is evident from these inquiries that Rabies has never been identified among deer, either in Germany or France, and although the disease has never

been recognised among these animals in this country,* there is, I think, very good grounds for believing that it has from time to time made its appearance among the herds of half-tamed deer which are kept in private parks in Great Britain.

I am indebted to Mr. Sawyer, the keeper of Richmond Park (whose experience and knowledge of the habits of deer has materially assisted me in making my inquiries), for the following accounts of outbreaks of disease among deer in this country, in which the symptoms presented bear such a strong resemblance to those observed in the deer in Richmond Park, that I have little doubt that former outbreaks of Rabies have occurred among these animals, and, what is still more interesting, it appears to have been transmitted from deer to deer, a circumstance which is extremely unusual in the herbivora, the rule being that only those animals of a herd which have been first bitten fall victims to the disease.

Among the outbreaks of disease in deer communicated to me by Mr. Sawyer is one which occurred in the Grove Park, the property of Lord Clarendon, in the year 1795. The description of the symptoms is as follows:—"Some of the animals when they first showed evidence of being unwell seemed giddy, turning round, and sometimes running forward, as is often seen in a deer when shot before it falls. Others seemed quite stupid, crept about by themselves, and were found dead, the skins upon the foreheads of some, and upon different parts of the body of others, being quite thin and parched."

It would appear that at the same date a disease was prevailing among the deer in Windsor Great Park, and that it lasted for some time, for in a letter from an ancestor of Mr. Sawyer's to the keeper at Cassiobury Park in 1798, he says, "I am sorry to hear that the distemper has destroyed so many deer at Cassiobury, and that it should remain so long in Windsor Great Park."

In 1872 an outbreak of disease appeared among the deer in the park at Eaton Hall, Cheshire, the property of his Grace the Duke of Westminster. The symptoms described to Mr. Sawyer by William Roberts, the park keeper,

* This statement is not correct. In 1856, according to *The Veterinarian* (Vol. xxix., p. 341), Rabies was recognised and described as affecting a herd of deer at Stainbrough, near Barnsley, coincidentally with the prevalence of the same disease among dogs and the wounding of people by them. Nearly one hundred deer died, and they presented the symptoms described in the above report, especially their aggressiveness and their worrying and wounding each other. The following allusion is made in Rabies and Hydrophobia, (p. 48):—"In England, in 1856, Rabies showed itself among dogs and in a herd of deer to such a serious extent at Stainbrough, near Barnsley, as to excite the alarm of the inhabitants of that locality, and to attract the attention of medical men. The disease began to exhibit itself on a small scale in a herd of deer in the latter part of last or early in the present year, immediately after one or more mad dogs had been seen roaming about the locality, one of which is supposed to have communicated the contagion. Nearly one hundred deer have already fallen victims to its effects. While in a state of disease, these otherwise innocent and playful animals foam at the mouth, worry each other like dogs, and tear off each other's hair and flesh, and, when placed in a state of confinement, bite at whatever comes within their reach. With these symptoms the above number have already died, and others are being continually affected by the disease. Five or six dogs have also died at the same place, exhibiting the same symptoms. Until recently the disease was not suspected to be Rabies, but attention has been particularly drawn to the matter, through a child belonging to one of the workmen having been bitten by one of the dogs. This caused an alarm, which led to a medical gentleman being called in; and, on investigating the circumstances, he has pronounced the disease to be Rabies. In his official capacity of Medical Officer of the Barnsley Local Board of Health, he has issued a timely notice or caution to the inhabitants, in which he states that there cannot be any reasonable doubt that Hydrophobia has manifested itself to a serious extent in the neighbourhood, and he calls upon all persons to be on their guard to protect themselves and their families from the infliction of this terrible disease."—ED. V. J.

are in many respects identical with those observed in the deer in the recent outbreak in Richmond Park. "The park at Eaton Hall contained about 400 deer and 250 sheep. The first animal found affected was a buck. This animal had broken his horns, which were hanging by the velvet. Three days after he was found dead. The disease appeared among the herd in June, 1872, and continued for a very long period, until about 350 died. The first symptom noticed was pointing their noses in the air and sniffing, next day they were seen running at other deer. They were then seen to run at other deer and butt and fight at the trees, in fact they drove at anything dead or alive, until they rubbed the skin clean off their foreheads, in some instances until the bone was left bare, and they invariably died after an interval of from two to eight days."

Again in 1880 cases of apparent madness occurred among the deer at Swythamley Park, Staffordshire, the property of Mr. Philip Brocklehurst. "Some of the animals were seen charging furiously and endeavouring to bite any other deer which approached them, and even chased hares and rabbits. Seeing the keepers watching them, these animals, usually so timid, rushed at the men like wild bulls, and were shot.

"On examination, no bite or wound was discovered, but the top and back of their heads had the hair rubbed off, and looked puffed and swelled, having the appearance of a leather football."

About six years ago the deer in Cassiobury Park (which belongs to the Earl of Essex) were affected with a disease which presented the following symptoms:—"The affected animals ran about the park in a frantic manner, rushing against trees, and thereby injuring themselves; they attacked other animals furiously, and many of them died."

In none of these outbreaks does Rabies appear to have been suspected, nor was there any evidence to show that Rabies was known to exist in the districts where they occurred. It must, however, be borne in mind that rabid dogs wander away from their own districts and not unfrequently roam about the country without their presence being known. Most of the parks in which deer are kept have their gates left open, or have footpaths through them which would make it an exceedingly easy matter for a dog to pass in and out of a park without being observed.

The outbreak which I am now about to report upon occurred among the deer in Richmond Park, in the county of Surrey, towards the close of a serious outbreak of Rabies which existed among dogs in London and its suburbs.

Richmond Park is one of the royal parks; it is 2,300 acres in extent, and is surrounded by fences or walls. There are five carriage entrances into the park, and about 1,200 deer are usually kept there, besides a certain number of grazing cattle. Most of the deer are of the kind known as fallow deer, but in a remote part of the park there are a few of the larger kind known as red deer. The park is open to the public at all times of the day, but the gates are closed in the evening. It would, therefore, be easy for a dog to enter the park at any time during the day, and, if fleet enough, bite a certain number of deer, and make its exit without being seen.

It should here be stated that it is the habit of the deer to separate into herds of about one or two hundred; further, that these herds rarely leave the part of the park in which they are accustomed to pasture, and it is a noticeable fact that the animals of these respective herds rarely intermix. This habit of segregation on their part will account for the disease being confined to the infected herds, as will hereafter be seen.

The first intimation of the existence of any disease among the deer was the discovery by the keepers, towards the end of September, 1886, of a doe, which was suckling a fawn, staggering about in the herd pasturing near the

entrance gate at East Sheen. The animal was killed, and it was then found that the hair was rubbed off the head, giving it the appearance described in the accounts of the outbreaks at the Grove in 1795, at Swythamley, and at Eaton Park. (Mr. Sawyer informs me that when a doe has a fawn she will attack a dog, and under these circumstances it is quite possible that this and other does in the herd may have been bitten by a stray rabid dog.)

Some days after the death of this doe, the keepers noticed others of the deer in the same herd behaving in a very erratic manner. At first they were constantly rubbing their heads against the stems of trees or on posts, and with such force that their hair was in some cases entirely removed. They were frequently seen to be biting the skin about their shoulders and bellies until they were perfectly raw, tearing out their hair, and at times they charged at the other deer.

As a rule the animals appeared to feed up to the time of their death, and when the keepers opened them they found within the stomachs pieces of stick, and other things which they would have ordinarily refused for food. All the animals were represented as showing the same symptoms, some being very violent before dying, and they usually died within two or three days of being first observed to be unwell.

It was at first thought that the animals had died from eating some poisonous food. The contents of the stomach were analysed on the suggestion of Mr. Lupton, the Veterinary Inspector of the Local Authority, but no poisonous food or substance could be found therein. The pastures were also searched for poisonous plants, but without success. The disease spread slowly through the herd, the animals dying at the rate of four a week; and by April, 1887, 160 had died, all presenting decided symptoms of some form of nervous disease, which in many instances ended in paralysis, and always in the death of the animal.

At this period Mr. Lupton suggested that the attention of the Department should be called to the outbreak, and on visiting the park on April 7th I found, first, the disease had up to that time been entirely confined to the herd grazing nearest to the East Sheen gate; and, secondly, that, although the herd had been removed from their former pasture, and had been enclosed in another part of the park, where their mode of feeding had been entirely changed, the animals continued to die at about the same rate and with the same symptoms. From this fact I concluded that the disease had not originated in the feeding of the animals. When watching the herd I observed that they presented several of the symptoms which are described in the outbreaks previously referred to. One of the earliest indications of their being affected was that of throwing the head back and sniffing the air, as described in the Eaton Hall outbreak. After a few moments they would start at a gallop, as though they had been suddenly alarmed, and they as suddenly stopped and again commenced to graze.

It being impossible to devote sufficient time in the park to study the symptoms and nature of the disease, a buck and fawn were forwarded to the Royal Veterinary College; the fawn, however, died four hours after admission. A *post-mortem* examination was made of this animal. The first stomach was found to contain a fair amount of the usual food; mixed with it was a considerable quantity of hair. The vessels of the brain appeared to be somewhat congested. The medulla of this animal was taken to the Brown Institution, where, under the direction of Professor Horsley, rabbits were inoculated, which died of Rabies.

The buck became so wild and violent that the persons in charge were unable to enter the loose box in which it was placed. This animal died two days after its arrival, and other rabbits were inoculated with portions of its spinal cord, with the same results as in the former case.

On April 18th another buck was sent to London; this time to the Brown Institution. It was placed in a loose box, and presented the same violent symptoms as the animal that died at the Veterinary College; but in this case paralysis of the limbs set in before death.

These animals, usually so timid, would rush at any person looking at them, and bite at a broom or a stick if put through the bars of the door.

Although the inoculation of the rabbits resulted in their death from paralytic Rabies, I suggested to Professor Horsley the desirability of inoculating a dog to see if true Rabies could be produced in that animal. Accordingly on May 26th, a dog was inoculated with part of the spinal cord of another affected deer which had been sent up from Richmond Park. Eleven days after the inoculation, *i.e.*, June 6th, the dog presented symptoms of Rabies, and died on June 12th; the autopsy was conducted by Professor Horsley, who found all the characteristic symptoms of Rabies present.

It having now become certain that the disease among the deer in Richmond Park was true Rabies, it was considered desirable to stamp out the disease as soon as possible. The animals were still confined to the enclosure in which theo had been placed, ahd Mr. Sawyer was advised to forthwith shoot ahy animal presenting the least indication of the disease. This was accordingly carried out.

The next feature in connection with this outbreak was the appearance of the disease in the month of June in the herd which had been grazing in the park next to the infected herd. As soon as the disease was detected in this second herd the whole of the animals were driven into an enclosure, and this time divided into small lots. The animals in this herd suffered in a larger proportion than the previous herd, and the disease continued with more or less virulence until Septemher 24th, by which time 264 animals had succumbed to the disease. Since that date no further cases have been reported.

There are some points, however, in connection with this outbreak which are worthy of consideration, and this being the first occasion in which Rabies has been identified in deer, a description of the symptoms of the disease will not be devoid of interest.

The earliest symptom observed in most cases was that of throwing their heads back on the shoulders and keeping their noses pointed to the sky; the animals are then seen to make sudden starts, and gallop right away from the rest of the herd.

Next they begin to rush at other deer, also at posts, rails, trees, or other fixed objects. When rushing at the latter they bruise their heads between the horns, and rub off the hair in patches. This may be looked upon as a prominent sign in the early stages of the disease.

Subsequently, instead of being timid, they become unusually bold, charging at other deer, and causing the greatest alarm in the herd, and if kept in close confinement they will rush at persons or objects brought in their way. At times a fawn will be seen to pursue and bite at old deer in a manner quite unnatural.

After a few days' illness the animals invariably die, some presenting violent paroxysms, while in other instances paralysis of the limbs becomes most marked before death.

Further, it is now clearly established that Rabies can be transmitted from herbivora to herbivora by the ordinary means of infection—viz., the saliva.

This assertion is, I think, warranted by the fact that, although these animals were isolated for a period of six months—a time far beyond the recognised period of incubation in Rabies—the disease continued to progress in the herds after all possible means by external infection had been cut off.

The most important question, however, which arises out of this outbreak is the means by which the virus was transmitted from animal to animal.

It has been found that, although the deer attempted to bite one another, they did not really penetrate the skin with their teeth, but only produced sores thereon; at the same time the diseased animals left a certain amount of saliva on the skins of those which were bitten. It was observed on several occasions when a healthy deer had been bitten by a rabid one that the animal bitten licked the spot, no doubt with the desire to soothe the irritation caused by the pinch or bite, and Mr. Sawyer informed me that it is a common practice for deer to lick the coats of other deer.

As a means of testing whether the disease could be communicated by the bite, a rabid doe was placed in a shed with a healthy buck, which had been previously entirely isolated from the infected herds. Immediately the rabid doe was placed with the other animal she flew at it like a dog, and bit it about the ears and neck; the healthy deer was carefully watched, and on the morning of the nineteenth day it showed symptoms of disease, it became furious, and died in a very short time. The experiment conclusively proves that Rabies can be conveyed by the bite of the rabid herbivora to another animal, and was a means of transmitting the infection in this outbreak; the absence of upper incisors in these animals must have rendered this method of inoculation very uncertain in its result, and no doubt accounts for the slow progress of the disease among the herd, a circumstance which throughout constituted the most peculiar feature in this outbreak.

There still remained another means by which the disease might have been transmitted—viz., that of feeding on pastures infected by the saliva of the diseased animals. This view is, however, negatived by the following experiment.

Four large red deer were enclosed with one of the infected herds of fallow deer and fed on the same herbage on a circumscribed area, but none of the red deer contracted the disease from eating the infected food. Nor were they infected by the saliva. This may be accounted for by the circumstance that the red and the fallow deer do not associate closely, and did not lick or bite one another.

Finally, in reference to the progress of the disease in these herds, it is interesting to note that the greater mortality in the early part of the outbreak was among the does and fawns; this is accounted for by the bucks protecting themselves with their horns from the attacks of the rabid does. Simultaneously with the shedding of their horns, the mortality increased among the bucks, and during the time the horns of the bucks were in velvet this continued.

ALEXR. C. COPE.

December 7th, 1887.

REPORT BY PROFESSOR VICTOR HORSLEY, B.S., F.R.S., ETC., PROFESSOR SUPERINTENDENT OF THE BROWN INSTITUTION, ETC., ETC.

The following is a brief account of observations and experiments made by myself upon certain deer sent to the Brown Institution from the infected herd in Richmond Park, by the courtesy of Mr. Sawyer, to whom I am also indebted for much information respecting the outbreak, and tissues from the same animals, submitted to me for examination and opinion by Mr. Cope.

I have watched the course of the disease as described by Mr. Cope in the foregoing report in four of the affected animals, and will now proceed to enumerate such symptoms as were exhibited by each as far as they could be observed in a loose box, the only accommodation possible at the Brown Institution.

I. Clinical Report.

Deer No. 1.—Admitted into the Brown Institution from Richmond Park, sent by Mr. Sawyer, at 6 p.m., 18th April, 1887. When removed from the

box in which it was brought the animal was very excited, but evidently very ill.

19th April, 9.30 a.m.—When seen this morning it had not fed since admission, and was lying on the ground apparently but semi-conscious. The position was peculiar, namely, the legs were stretched straight at right angles to the trunk, while the head and neck were strongly retracted (tonic spasm ?).

When touched it staggered up on to its feet, markedly paretic in its hind limbs. It was nevertheless still very excitable, for it flew at the stick with which I touched it with much fury. In doing so it fell down owing of course to the commencing paralysis.

20th April. Animal weaker, but still aggressive. The hind legs were more obviously paralysed. Occasionally there was a general tetanoid spasm specially marked in the hind quarters. This spasm fixed the animal in a remarkable position, in which, while the forelegs were vertical, the hind limbs were stretched far back and partly separated. The same attitude may often be seen in a similar stage of the disease in a rabid dog.

21st April, 10 a.m.—Temperature in the rectum 41° C. (about 105·8° F.). The animal was now almost completely comatose; it lay on its left side with marked opisthotonic contraction of the muscles of the back. The least touch caused tetanoid spasm of the limbs in extension. There was, in addition, a constant rhythmical chewing movement of the jaws. (It, however, had not eaten anything since admission.) Sensation to pain appeared dulled. At 11 a.m. the animal suddenly died. (Cardiac failure probably.)

Post-mortem Examination.

Immediately after death.

Central Nervous System.

Brain.—Appeared perfectly normal. *Spinal Cord.*—Vessels moderately distended.

Lymphatic System.

Serous Membranes (*i.e.*, Pericardium, Pleuræ, Peritoneum). Perfectly normal.

Circulatory System.

Heart.—Normal. *Blood.*—Dark and fluid.

Respiratory System.

Larynx.—Full of tenacious mucus. Marked capillary congestion of the mucous membrane, with slight Œdema of the larynx, epiglottis, and the base of the tongue. *Trachea.*—Venous congestion. *Lungs.*—Very pink; doubtful if more than normal vascularity.

Alimentary System.

Pharynx.—Normal, but full of mucus. *Gullet.*—Normal, but full of mucus. *Stomach.*—Full of normal food. The reticulate mucous membrane was very pink, with distended vessels. *Intestines.*—Both the large and small intestines were nearly empty, the former only containing a little watery bile-stained mucus. *Liver* was normal on section, save that scattered through its substance were numerous small circular tumours, pale and yellowish white on section. *Spleen.*—Normal. *Pancreas.*—Normal.

Renal System.

Kidneys.—Both a little congested. *Bladder.*—Distended with urine.

DEER No. 2.—Received dead at the Brown Institution on 26th May, 1887.

POST-MORTEM EXAMINATION.

In this all the organs appeared normal except the *larynx*, which, as in the former case, was congested.

From the spinal cord of this animal rabbits Nos. 5 and 6 and dog No. 1 were inoculated by trephining.

DEER No. 3.—Admitted into the Brown Institution on 1st June, 1887. This animal, a doe, is of special interest, inasmuch as it is the one referred to on page 9 of Mr. Cope's report as having bitten deer No. 4, *vid. infra.* Moreover, being pregnant, it afforded the invaluable opportunity of testing the asserted power of the rabic virus to pass from the maternal to the fœtal circulation through the placenta.

1st June, 1887.—Animal extremely aggressive, rushing fiercely to the door of the stall whenever any one approached it, and savagely seizing with its teeth any object presented to it. The hind legs were very much paralysed, and this may have been rather unusually marked at this stage in this particular instance, since this animal had during the previous eighteen hours violently attacked deer No. 4, and consequently it may have become more or less exhausted. This is the more probable, because on the 2nd June, 1887, it was found dead, having succumbed during the night probably to syncope.

POST-MORTEM EXAMINATION (about 6 hours after death).

Rigor mortis well marked.

Central Nervous System.

Brain—Moderate, but general congestion. *Spinal Cord.*—Ditto.

Lymphatic System.

Serous Membranes.—Normal, etc. The rest of the organs in this case presented the same appearances as in No. 1, save that there were no tumours in the liver, these being clearly accessory. Most noteworthy is that there was to be seen, as in the former cases, the same congestion and œdema of the larynx, which was full of tenacious mucus. The lungs were distinctly congested, and in places collapsed. The uterus contained a fœtus about two feet in length. From this fœtus two rabbits were inoculated, *vid. infra.*

DEER No. 4.—Admitted into the Brown Institution 20th June, 1887. This animal, a buck, had been separated from the herd for three months till the 1st June, when, as described by Mr. Cope, Deer No. 3 was placed with it and attacked it severely. On the 19th June (thus nineteen days, incubation period) it showed the premonitory symptoms, and was at once forwarded to the institution.

20th June, 1887.—Animal very excitable and most aggressive. It made attempts to eat and drink, but it was very difficult to determine whether it actually swallowed food.

21st June.—Worse, much more vicious. It stood with its head thrown back, the eyes staring, and it charged everything which suddenly attracted

its attention. This day I observed for the first time in these animals a genuine pharyngeal spasm on its attempting to swallow water. It plunged its muzzle deep in the water, made champing movements with its jaws, and tried to swallow. The larynx could be seen rising in jerks just as in the human being, while the water ran out of the angles of the mouth. It did not eat.

22nd June.—Paresis set in this day. Every charge the animal made was accompanied by staggering, and not infrequently fell, the hind quarters, as in the other cases sinking, and the hind limbs collapsing.

23rd June.—Animal died in the night.

Post-mortem Examination.

As in Deer No. 3, save that the brain and spinal cord were more intensely congested.

Microscopical examination of the tissues revealed the well-known changes that have been observed in man, the dog, etc., viz., extreme congestion, hæmorrhages, and extravasation of leucocytes, etc.

II. Pathological and Experimental Report.

The outbreak of Rabies among the deer in Richmond Park was, as detailed in Mr. Cope's Report, investigated by him, and he received two animals at the Veterinary College for examination.

From these two animals the medulla oblongata was removed and sent to the Brown Institution. In each case a portion of the medulla was crushed in sterilised bouillion, according to the method described by M. Pasteur, and a small quantity injected into the subdural space of two rabbits.

The four rabbits thus inoculated, all died of typical rabies, the incubation period varying from ten to fourteen days. The post-mortem appearances were most characteristic, as I have elsewhere described to be found in these animals when dying of this disease. (Report to the President of the Local Government Board of a Committee of Inquiry into M. Pasteur's treatment of Hydrophobia.)

Although the malady affecting the deer was thus proved to be rabies, I consented at the request of Mr. Cope to complete the proof by testing the virus on a dog.

I took therefore the medulla oblongata and cervical spinal cord of Deer No. 2, and inoculated therefrom (also by trephining two rabbits and one dog.)

The rabbits died just as Nos. 1, 2, 3 and 4, of typical Rabies, with the rather longer incubation period of fourteen or sixteen days. The post-mortem signs also were quite characteristic. The details of the dog's illness may with advantage be briefly alluded to since this is the first instance in which the transmission of rabies has been effected by inoculation from deer to the rabbit and dog.

Dog No. 1.—Small, young adult, black and tan terrier inoculated by trephining on 26th May, 1887. It remained perfectly well until the 7th June, 1887, *i.e.*, eleven days' incubation, when it was noticed to be very excitable and restless, jumping up to the top of its cage, snapping at everything, and eating the straw of its bed. It furiously attacked two dogs in the same cage after quietly but energetically licking them, they being evidently alarmed at it. The dog No. 1 was much exhausted after these combats, but its viciousness was increased. Its bark, already hoarse, soon developed the well-known falsetto termination. The disease then ran its usual course during the succeeding four days, the dog remaining savage to within the last two days, when Paralysis of the hind legs set in, and death by coma followed.

POST-MORTEM EXAMINATION (about eight hours after death).

Rigor mortis well marked. No organ presented any marked change, save the following:—

Respiratory System.

Larynx, moderately congested; *trachae*, ditto; *lungs*, greatly congested, being of a dark red colour

Alimentary Canal.

Tongue, dry; *pharynx*, slightly congested; *stomach*, well-marked capillary congestion of the mucous membrane; *contents*, watery mucus, coffee ground material (evidently blood), and a quantity of hay. The evidence was thus rendered quite conclusive as to the real nature of the malady from which the deer were suffering.

EXPERIMENT WITH THE FŒTUS OF DEER No. 3.

The question whether the virus of an acute specific disease can pass through the placenta from the maternal to the fœtal circulation is yet so indeterminate and yet so important that any observation on the point, negative though it may be, is worth recording.

On laying open the uterus of deer No. 3, there was found a healthy fœtus about two feet long quite dead, but its decease evidently had only occurred on that of the mother.

On dissection nothing was observable in the organs, but the spinal cord being removed, a small portion was crushed in bouillon, and inoculation practised therewith on two rabbits.

Nos. 7 and 8 on 2nd June, 1887.

3rd June, 1887.—One rabbit, No. 7, unfortunately died of Septicaemia 26th November, 1887. The other rabbit, No. 8, lived in perfect health till this day, when it was inoculated in series, and succumbed with the usual symptoms.

It will thus be seen that these experiments were negative in their results, but at least it is evident that rabbit No. 8 received no virus from the fœtal deer. This question of the transmission of the virus through the placenta can only be definitely decided when a large number* of independent observations have been collected together.

(Signed) VICTOR HORSLEY, F.R.S.

PUTREFACTIVE ORGANISMS.

AT the annual meeting of the Royal Microscopical Society, the Rev. Dr. Dallinger, F.R.S, delivered an address on the cycle of putrefactive organisms. There can be no longer any doubt that the destructive process of putrefaction is essentially a process of fermentation, and that the fermentive organism is as absolutely essential to the setting up of destructive rotting or putrescence in a putrescible fluid as the yeast plant is to the setting up of alcoholic fermentation in a saccharine fluid. A sterilised solution of proteine in absolutely purified air will remain for any length of time without trace of decay; while inoculation with the slightest atom from a putrescent source will shortly cause turbidity and putrescence throughout. It has been commonly supposed that the exciting fermentive agency is wholly bacterial. No doubt the leading agency of this kind is *Bacterium termo*, and it is impossible to find a decom-

* A few observations are already recorded by Perroncito and Carita, and Bardach in the "Annales de l'Institut Pasteur, 1887."

posing proteinaceous (or albuminous) solution at any stage without finding this form in vast abundance. But in following the processes of destructive fermentation in large masses of tissue lying in water at an average temperature it is seen that the destructive process is the work, not of one organism but of many, and that they succeed each other in a remarkable manner. Apparently each set in turn take up the work at a particular stage, feed and develop after their kind, carrying on the destructive process, and at the same time giving rise to conditions suitable for the immediate successor in the cycle; and there is an adaptation of form, functions, mode of multiplication, etc., to the conditions at that stage. The aim of nature in this action is the ultimate setting free of the elements locked up in large masses of organic tissue, and so sending back into nature of the only material of which future organic structures can be composed. Beginning with *Bacterium termo*, this minute creature appears in the fluid surrounding a piece of decaying flesh or fish and increases with astounding rapidity, clothing the tissue as with a skin, noxious gases being at the same time thrown off. In the course of a week or more, dependent on the period of the year, there is usually a development of spiral forms, which likewise invest the rotting tissues, but are always in movement. These bring about a softness and flaccidity in the decomposing tissues. After this a further series of organisms arises, one of a limited set of putrefactive monads of which Dr. Dallinger has specially investigated the life history. They multiply with astonishing rapidity, and by some concurrent changes the decaying mass becomes more and more yielding. These are followed by other forms that at first swim and gyrate and glide about in the decomposing matter. One of these forms, *Heteromita rostrata*, has a long fibre or flagellum that gracefully trails after it as it swims. At certain periods of its life this form anchors in countless billions all over the fermenting tissues, and coiling the fibre bring the body to the level of the point of anchorage, and then shoot it out with lightning-like rapidity, bringing it down like a hammer on some point of the decaying mass. It rests for a second or two, and then repeats the process. This goes on with a sort of rhythmic movement all over the rotting tissue, and the result is to gradually break it up and cause it to disappear. Other forms are known which do similar work, some even more powerfully. In a period varying from one month to two or three the entire mass of organic substance with which we started has disappeared and the decomposing fluid is exhausted, nothing being left in the vessel but slightly noxious and pale grey water, charged with carbonic acid, and a fine buff-coloured impalpable sediment at the bottom. Thus Dr. Dallinger is led to conclude that the most important of all ferments, that by which nature's dead organic masses are removed, is complex, and includes the successive vital activities of a series of adapted organisms which are for ever at work in every region of the earth. Our acquaintance with the detailed changes thus brought about is but imperfect as yet, and the view thus sketched opens out a large field for research which may have most important sanitary bearings. Towards the conclusion of his address Dr. Dallinger referred to the vital processes of the very simplest and lowest life forms as being as much directed and controlled by immutable laws as the most complex and elevated. "The irrefragable philosophy of modern biology," said the president, "is that the most complex forms of living creatures have derived their complexity from slow and progressive variation and survival from the simplest forms. If, then, these simplest forms of the present and past were not governed by the same accurate laws of life, how did the rigid certainties that govern the more complex come into play?" Consequently there is no room in philosophy for, as there is no fact really supporting, the supposed transformations of one kind of animal into another *per saltum*.

REPORT ON A PROFESSIONAL VISIT TO THE CONTINENT.

[The following is another Report, in reality the first, from First Class Veterinary Surgeons DUCK and F. SMITH, addressed to the Principal Veterinary Surgeon to the Army, on a Professional Visit to the Continent in 1887.]

SIR,—We have the honour to submit for your information a further report on what we saw during a recent visit to France, Germany, and Belgium.

The report is by no means so complete as we would have liked, as, both in France and Germany, we had great difficulty in seeing what we wished to, and had it not been for letters, kindly furnished by yourself, and introductions given us to the Military Attaché at Berlin, we would have seen but little, and, as regards Germany, positively nothing. In visiting Paris we were unfortunate in finding the majority of the troops absent at manœuvres.

Our subject is best divided, for purposes of description, into the following heads:—1. Horses; 2. Stables; 3. Saddlery; 4. Forage; 5. Forges; 6. Shoeing.

HORSES.

French Army.—We saw a portion of a Cuirassier regiment in Paris; the horses were poor in condition, and showed a decided want of breeding. It appeared to us either that they were starved or had been worked off their legs. They were standing tied up outside the stable, and not a move or sign of life in them. They were by no means well groomed. The officers' horses were decidedly of a better class.

We visited a Chasseur regiment at St. Germain. The horses were small, about fifteen hands and a half inch, light, in fairly good condition, and showed a certain amount of breeding. In a camp at this suburb we saw the horses of the Ecole Militaire. These had lately been brought here, owing to an outbreak of Paralysis in the stables in Paris. They were a good all-round lot. The chargers for cavalry were excellent, showing bone, substance, and breeding; those for artillery were heavier and coarser, but still very good. At Vicennes we saw a few field artillery horses; they were a good-looking lot and suitable for their particular purpose.

German Army.—At Cologne we saw a Cuirassier regiment which had just marched in from local manœuvres of a severe nature. The horses were a fine lot—big animals, rather spare, but in sound, hard-working condition. They were about 15·3 in height, from half to three-parts bred, well-shaped, and good shoulders.

The remounts were a promising lot of powerful horses, and fairly well bred.

We saw the horses of two field batteries which had also lately returned from manœuvres. They were wearing blankets at mid-day stables, though a warm day. It was explained that this was the system until the horses were thoroughly dry. They were generally in fair condition: a few thin, others, again, gross. We looked in vain for the sealed pattern English artillery horse; he did not exist. What we saw were well-bred animals, to our mind decidedly light for artillery purposes, and which would have been classed by us as horse artillery detachment or cavalry horses. We could see no wheelers. We were much impressed by the want of substance in these horses, and still more surprised when, on the following day, we saw them stepping lightly along with a field gun behind them, and making no more fuss about it than our horses do. It appeared to us that the German gun is lighter; the carriage must be, and the limber boxes appeared half the size of ours. The gun detachment was marching.

At Bonn we saw a regiment of Hussars which had that morning returned from manœuvres, where they had evidently done severe work. The horses were about fifteen hands. The majority were well bred, many being per-

fect types of light cavalry troopers. They were well-groomed, and gave one the impression of being thoroughly looked after. We observed that many of their legs and fetlocks were filled, proving beyond doubt that these horses had done, as represented, very severe work.

Belgian Army.—In Brussels we saw a regiment of Guides, the horses of which all come from Ireland. It can be understood, therefore, in going round these stables, we were looking at the same class of animal found in our own regiments, and evidently the same care and judgment is exercised in their selection.

We had also an opportunity of seeing a Battery of Artillery. The riding-horses came from Ireland, the draught-horses are all Belgians from the Ardennes district, smaller than our own, showing more substance than the German, but wanting in quality; nevertheless good, useful draught-horses of roan colour.

Respecting the price paid by these various armies for their horses, we found it very difficult to obtain exact information.

The age at which horses of the different armies join the service is very important; they are received into regiments at five years old, but their military work does not commence until they are six. We need not dwell on the sound economy and utility of this admirable rule.

There appears to be no fixed age at which horses are cast. In Germany they are got rid of when used up. We were shown, at Cologne, a horse which had served in the war of 1870-71, and was still doing his duty well.

In comparing the merits of horses of the respective armies, especially the French and German, we have no hesitation in saying, judging from what we saw, that the German horses—both light and heavy—are infinitely superior to the French.

Before concluding this subject, we would draw particular attention to the temperament of all horses we saw on the Continent. We were much impressed by the quiet manner in which they behaved, both in and out of the stable—no noise, kicking, or rattling of chains; it was almost impossible to believe that one was in a troop-stable full of horses. We observed the same thing outside, and we were informed that broken legs were rare. It may be explained that the difference in breed between French and German horses and our own will account for this, but we observed exactly the same thing in Belgium, where, as we have noticed, the horses are bought in the same market as our own. There is only one explanation we can offer, and we feel it to be the true one, viz., the men are much quieter with their horses than the average English trooper is, and their system of training is slower and longer than ours.

Stables.

French Army.—In Paris we saw the stables evacuated by the horses of the Ecole Militaire. It was a very wide building, with no less than four rows of stalls running the length of the stable. The men's rooms were overhead, but light and roof ventilation were provided by a rather ingenious arrangement.

The stalls were narrow, except for valuable troop and officers' horses. They were divided by bails hung from above, no pillars existing, as with us. The arrangement for freeing the bail was the same as we use, but we noticed a good plan of preventing the chain below the hook hurting a horse which may get over the bail. The whole part is protected by a wooden or iron cylinder, 1½ feet long, which completely envelopes the chain and prevents it injuring the horse.

The mangers were of brick, with a small enamelled iron trough. They were very high, and decidedly bad. The hay-racks were wooden, placed above the head, and ran the length of the stable; they were highly objectionable. Flooring

irregular, large square-cut stones; drainage surface, light good, but ventilation insufficient for four rows of horses. It was in this stable that an outbreak of Paralysis had occurred of a very serious nature. Out of twenty-eight attacked eleven died.

A Cuirassier stable was built on much the same principle as our own, with the men's rooms overhead, but the horses placed the length of the stable, and only two between opposite windows. This stable was very high, and fairly well lighted and ventilated. The odour on entering was very marked, and wet and dirty-looking bedding was down; the drainage, mangers, racks, etc., much the same as in the last stable.

The Chasseur stable at St. Germain was much the same as the last, but here we learned the astounding fact that in the French cavalry the building, in stable parlance, is only "mucked out" *once a month*. Our visit happened to fall on that day, and the stench was abominable. Ordinarily they remove nothing but the droppings, which can be picked out, and cover over the mass with clean straw, each day repeating the operation until the horses are left standing on decomposing filth five or six inches in thickness. We were informed that the stables are thoroughly cleaned and disinfected once a year. Wooden pitchforks are used, of which we think highly; no barrows, but litters carried by two men for conveying away stable refuse.

The temporary stalls in the camp at St. Germain were good and clean, floor of earth, litter down as usual. We noticed a very simple arrangement for freeing the bail, which might be adopted with advantage, at any rate in temporary stables. A wooden hook has a hole at one end through which passes the rope from above. The other extremity of the hook is held up against the rope by a ring; when the ring is pulled up the bail is released.

German Army.—Cologne Cavalry stables were fair, closed roofs with lofts overhead, drainage surface, lighting and ventilation indifferent, bails and posts used, and horses with heads to outside wall. Artillery stables decidedly bad; dark, and absence of ventilation. The building was an old convent. The officers recognise that the stables are indifferent. The bails are hung very low, by means of a hook passing into a slot in the post, with no means of releasing it, and straw mats hung from them. This appears to be done more for appearance than protection, and only one battery had it. This army only "mucks out" once a month.

The Cavalry stable at Bonn was much the same as the others; there was, however, an attempt at roof ventilation; all windows, as in the other stables, closed.

Belgian Army.—Brussels Cavalry stables are very fair. We object, however, to four rows of horses between opposite sources of air; the stables were wide, light, lofty, and fairly-well ventilated. The fastening of the horses, and we may say the French and Germans use the same, is a sliding ring on a bar which runs down in front of the manger to within a foot of the ground. It appears to make no noise, and is a permanency.

There are no heel posts in the stable. The bails are hung from above, the method of releasing is self-acting, simple, and can be made by any farrier. A piece of iron is turned somewhat in the shape of a sugar tongs, curving in at the ends. Into this is placed a wedge of iron attached to the chain holding up the bail. As long as there is no great weight on the bail the support is perfect, but if a horse gets over and attempts to rest on it the weight draws the wedge through, and the bail drops. In this army we also find that "mucking out" once a month is considered sufficient.

Infirmary Stables.—In France these were very fair, boxes were sufficient, and one always fitted up for slinging. The arrangement above is peculiar, being an iron cradle on wheels, so that the patient can be drawn backwards or forwards. Irrigation arrangements also exist by the side of the slings.

The pharmacy is well fitted up, and instruments are freely supplied. There appears to be no infirmary stables in the German Army, except for suspicious cases of disease. We saw the lame horses being treated in the troop lines. In Belgium the infirmary stables were supplied with every convenience. We will deal more fully with this subject in our professional report.

SADDLERY.

We have one or two important points to draw particular attention to under this head.

French Army.—We saw the Cuirassier saddle possessing an iron front arch and a wooden rear. It had thin pannels, and the saddle was placed on a blue, thick blanket in four folds. There was no cantle to the saddle, and we observed that a flat folded cloak behind had the centre strap suspiciously close to the spine; the stirrups were small; girth straps divergent, one attached to the front and one to the rear arch; the girth was of cord; bit lighter than ours and no boss, snaffle double-hinged, and connected by a chain fastened with a T above. The Chasseurs use a wooden saddle placed on a blanket. No cruppers used.

German Army.—Cuirassier saddle. We observed particularly how well the horses carried their girths, and on enquiry found it was due to the girth (string) having three straps, one going to each arch and one to the centre of the side board. The saddle was a wooden tree strengthened with iron, covered with wide linen panels, with but little stuffing, the saddle flaps cut square. At the back of the seat was stitched a roll of leather; the cantle was cut low, but the cloak and forage net were buckled on the *top* of the arch and rested here, supported by the leather roll previously described; the side-boards projected but a short distance behind and nothing rested on them. The wallets were of considerable size and carried all the man's kit, one of the wallet straps passes through a girth tab; breast plate carried, but no crupper. Under the saddle was a blanket about 7 lbs. in weight, white colour and of good thick material; they say they wear for years. In folding the blanket (it takes two men) it is first well shaken, then folded in three, lengthways; one end is then turned in for about half a foot, and the opposite end brought up and laid over it; thus one end is one fold thicker than the other, and the thickest end is placed foremost; in this way it is placed on the back, and after the saddle has been adjusted and the *blanket raised in the arches*, the girthing begins. In order to keep the blanket in its place, one of the folds at the anterior extremity on each side is turned backwards and placed under the front girth strap; *the blanket will now never shift.* There was but one sore back, and that very slight.

The head collars were lighter than ours, and buckled on the poll. The bits were smaller and shorter; the birdoon fastened by a chain and T-piece.

The Hussar saddle is on the Hungarian Bock principle: that is, wooden or iron arches resting on light square-cut sideboards; cantle high. Over this is placed a leather seat padded with straw, kept in its place by passing over the cantle and strapped in front. The whole looks clumsy, but they say it is very comfortable. The bare sideboards are placed on a good blanket folded as before. We noticed that some of the saddles had thin straw pannels tied together with string; their utility appears doubtful. No cruppers were used, and the breastplate was fastened to the saddle by a strap which went across the seat. There were no sore backs in the regiment. The artillery use the Hungarian Bock saddle as before described. We again noticed how well the girth was carried (string girths used by this arm); the traces were of rope and about half the thickness of ours. All the harness appeared light; very much lighter than we use. The saddlery of this army appeared very old and very dirty, no attempt at polish; leather work hard, cracked, and apparently perished; in many places the stitching had given way, but withal the turn-out looked serviceable.

Belgian Army.—Cavalry saddle peculiar. There is a double sideboard, and between the two a ball and socket joint anteriorly and posteriorly, so that the sideboard will adjust itself to the angle of the back on which it rests. The whole is placed on a blanket folded, and kept in its place by the same means as the Germans employ.

The artillery saddle is the same principle as the cavalry, but has a split seat, which is considered a disadvantage. The side boards are often placed on the bare back for light duties, the girth straps are attached to both front and rear arches, and the rear one goes across the saddle to its fellow on the opposite side. They girth downwards, a decided advantage for a short driver. The stirrup irons are blackened; no attempt at iron or leather polish. They carry a spare curb chain on the top of the head collar. The draught is the same as the French and German, viz., pole, but we observed a most simple and ingenious method of applying in pole draught the advantages of the breeching used in shaft draught. A breeching is put on in the ordinary way, a strap goes round the front of the horse, passing through loops in the collar, and attached to the breeching on both sides. The pole chains are not attached to the collar, but to this strap, so that in pulling up there is no strain on the collar and back of neck, but only on the breeching. The arrangement is admirable, and it should be used in every case of pole draught; the advantage to the animal is enormous, and we are pleased to hear that on our recommendation it has already been tried.

Saddle racks are placed in the stable of the French and Germans, but with the Belgians the saddles are kept in proper saddle rooms. The French use a bracket which can be let down when required. The Germans hang their saddles up by a strap to a peg, and to prevent the edge of the arch getting injured against the post there is a straw mat for it to rest against.

We would respectfully draw especial attention to our remarks on saddlery. We observe, first, that the blanket is universally used and appreciated; it does not get displaced, and is easily kept in position. The blanket is always a good one; the girths are string, and attached invariably to each end of the saddle, thus ensuring their being kept in their place, and preventing the latter rocking. The admirable contrivance for applying of breeching in pole-draught is especially valuable. Of all we saw, nothing in our opinion taught us so much as this inquiry into the saddle, and we had ocular proof of the value of the system in the German army in the practically entire absence of sore backs after very heavy work.

We regret we cannot state the weights carried by the different armies. They appear to be much the same as our own, excepting in the German artillery, where less is carried.

Forage.—We noticed that in all the armies straw was an essential article of diet, being put in the rack with hay. The hay appeared inferior, and the trusses were in reality bundles; the oats were as good as our contract corn. In the German Cuirassier regiment beans were given after being steeped in water for some time; the beans were purchased from the manure sold. The amount of forage given is much the same as ours, excepting the hay, which is less, and made up by straw. In the German army the stable refuse belongs to the regiment, and is sold, extra rations being purchased for the horses. In the French and Belgian armies the manure is the property of the government.

Forges.—In all the armies hot shoeing is used. The shoes and shoeing to our ideas are old-fashioned; it takes two men to shoe a horse, and the same care is not observed as with us; both knife and rasp are freely used, and the feet much mutilated.

There appears to be no definite method of frost shoeing. The French are trying frost nails, one with a large square head, and one with a sharp head

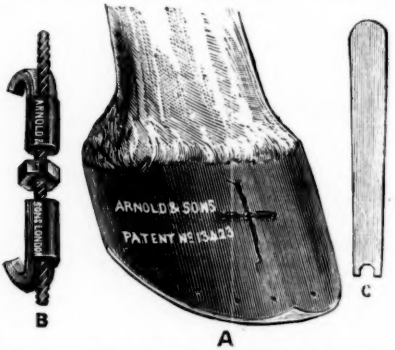
We were told they preferred a flat to a sharp head, as the flat head wore with sharp edges, whereas the sharp heads soon blunt. The Germans use the square stud, and have the same complaint as we have, viz., cannot depend on their keeping in. The Belgians use a frost nail. Both French and Belgians use indiarubber frog pads. and speak highly of them for town work; they last two or three months. In Brussels we were shown a frog pad made of leather, from which much was expected.

Picketing.—The Germans use a picket line secured by posts about two and a half feet above the ground. To this the head ropes are fastened. The object of keeping it so high above the ground is to prevent horses from getting over it. They use no heel ropes, as with a high line they are not required. The Belgians use nothing but an iron picketing ring, and to this they tie twelve or more horses. They say the horses can rest, and are very comfortable. The saving to a regiment in weight carried by adopting this ring is enormous.

In conclusion, we would say that matters of special veterinary interest which we saw at the French and Belgian veterinary schools, and Pasteur's Institute at Paris, will form the subject of a professional report.

IMPROVED SCREW CLAMP FOR SANDCRACK IN HORSES.

SUGGESTED BY PROFESSOR D. MCGILL, F.R.C.V.S.



THE object of this invention, which is patented, is to arrange on a spindle that is screw-threaded at one end, with a right-hand thread B, and at the other end with a left-hand thread, two clips or clamps free to travel on the thread, there being a nut between the two which can be turned by a spanner, C.

The clamps are placed on the hoof, one on each side of the Sandcrack, the hoof being prepared to receive the instrument by filing a groove or notch for the clamps to fit into; and by turning the nut on the screw the clamps are brought towards each other, and so draw the sides of the crack together, the latter being thus prevented from extending. They have been used in many very severe cases with perfect success. The clamps prevent all movement, and in cases in which the crack had been opened up, and into which was inserted about an inch in width of hard wood, enabled to get perfect solidity. Horses are now working without showing lameness; for a sandcrack, when taken in time, the clamp stops it at once effectually.

It is manufactured and patented by Messrs. Arnold and Sons, of West Smithfield, London.

THE FITZWYGRAM PRIZES.

We are requested by Lieut.-Gen. Sir F. Fitzwygram, Bart., to say that he intends to give his Veterinary prizes as usual; but in consequence of the changes lately made in the examinations of the R.C.V.S., he is unable at present to fix the date of the competition.

SOCIÉTÉ NATIONALE D'AGRICULTURE OF FRANCE.

At the meeting of this Society, held in Paris on February 15th, Dr. George Fleming, C.B., Principal Veterinarian to the Forces, was unanimously elected a Foreign Member. The *Times* of February 21st, in making this announcement, mentions that this Society is very similar to the Academy of Sciences, its Members being restricted to fifty-two in number, and its Associates to thirty. Membership in it is the highest honour in French agriculture. It is added that Dr. Fleming is elected for distinguished service in connection with live stock. In the announcement made by the Secretary, it is stated that the Society, in making the election, was desirous of recognising in the fullest manner the value of the new member's fine works (*beaux travaux*) on the veterinary art.

We are sure the members of the veterinary profession in this country will accept this distinction as a very high compliment to themselves, as a body, from, perhaps, the most select and influential agricultural society in the world.

Reviews.

A Treatise on the Diseases of the Dog; Being a Manual of Canine Pathology. By J. H. Steel, M.R.C.V.S., Army Veterinary Department. (London: Longmans, Green & Co. 1888.)

Mr. Steel has added another to the list of his useful books, by publishing this manual on dog diseases, which, we presume, is intended for the use of veterinary surgeons more especially—indeed, it is so stated in the preface. It is the best work on the subject yet produced, at least in the English language, and considering the disadvantages under which the author laboured—for not only was he out of this country, but his duties as Professor of Veterinary Science and Superintendent of the Bombay Veterinary School, must have allowed him little time for book-writing—it is very complete, and the scientific references are brought well up to date. And, as Mr. Steel observes, the work has a distinct character of its own, in the incorporation of such facts of anatomy, physiology, pathology, and the other accessory sciences as bear on the actual details of diseases, and which, being peculiar to the dog as compared with other animals, are liable to slip the memory, or escape special notice in the course of study of disease in general. Those members who are engaged in canine practice, and even those who are only incidentally consulted on dog management and ailment, will, we doubt not, gladly accept this valuable contribution to veterinary literature as a guide and book of reference.

Manuel de L'Inspecteur des Viandes. Par L. Villain et V Bascon. (Paris: G. Carré. 1888.)

The immense importance to the public of a proper and thorough

system of meat inspection has long been recognised by the principal Continental governments, and arrangements for providing flesh, not only of quality fit for food, but free from dangerous properties, are more or less perfect. These arrangements consist chiefly of public abbatoirs and government or municipal inspectors, who are members of the veterinary profession. The abbatoirs of Paris have generally been classed among the most complete and commodious, and the system of inspection as very trustworthy. The Parisians are therefore guaranteed against fraud and danger, through the admirable provision made on their behalf, while the experience acquired by the professional experts is very great, and has often been placed before their colleagues. In this respect, however, the Parisian veterinary inspectors have only done what many others in France, Germany, Italy, Belgium, and elsewhere on the Continent, have praiseworthily accomplished.

The work now before us is the production of M. Villain, chief of the slaughter-house inspection of Paris, and M. Bascon, controller of the same service, assisted by MM. Latourcade Moulé and Méraux, inspectors also of this service, all being members of the veterinary profession. It is the complement to another work having the same title, and which appeared as a report presented to the Paris Préfet of Police in 1885, and is in the form of an atlas of well-executed plates, nearly all coloured, and a descriptive portion treating of the different conditions which should render the condemnation of meat necessary, the importance of examining the animals before slaughter, the determination of the age of calves, abbatoirs, flesh improper for consumption ; the "blowing" of veal by butchers, the parasites of flesh, and legislation with regard to butcheries and the sale of meat.

In all these points the authors are brief, but explicit, and their observations, based on intelligent experience, are of great value; while the plates, which have been prepared under their immediate direction, appeal at once to the eye, and must prove of much value to those who are concerned in meat inspection, whether it be that of the bovine, ovine, and porcine species only, or that also of the horse, mule, and ass.

Proceedings of Veterinary Medical Societies, &c.

ROYAL COLLEGE OF VETERINARY SURGEONS.

SPECIAL MEETING OF COUNCIL HELD JANUARY 18th, 1888.

SIR HENRY SIMPSON, President, in the chair.

Present:—Sir F. Fitzwygram, Bart., Dr. Fleming, C.B.; Professors Axe, Brown, C.B., Duguid, McCall, Pritchard, Walley, Williams; Messrs. Barford, Briggs, Campbell, Carter, Cartledge, J. Roalfe Cox, Dray, Greaves, Harpley, Mulvey, Perrins, Santy, Simcocks, J. F. Simpson, Taylor, Whittle, Wm. Woods, Wragg, Mr. George Thatcher (Solicitor to the College) and the Secretary.

The minutes of the last meeting were read and confirmed.

The PRESIDENT said that the New Rules of Examination had been suspended for three calendar months in accordance with the Charter, and such as

were passed to-day would have to be confirmed within fourteen days by a special meeting.

On the motion of Mr. TAYLOR, seconded by Mr. GREAVES, the Regulations for the Examination of Veterinary Students in General Education were agreed to.

Regulations for the Professional Education.

On the motion of Mr. CARTLEDGE, seconded by Professor WILLIAMS, Regulation No. 1 was agreed to.

On the motion of Mr. J. SIMPSON, seconded by Mr. CARTER, Regulation No. 2 was agreed to.

On the motion of Mr. WOODS, seconded by Mr. PERRINS, Regulation No. 3 was agreed to.

Mr. BRIGGS proposed, and Professor McCALL seconded, "That Rule No. 4 be passed," adding the words "Equine and comparative" after "Syndesmology."

Mr. WRAGG said that many students of the London School had entered on the understanding that "Anatomy" would be in the second examination.

The PRESIDENT said all students entered subject to the Rules and Regulations laid down by the College, and the new Rules would be binding on them.

Professor PRITCHARD said they entered under the Rules of the Royal College of Veterinary Surgeons, and they demanded to be examined under them.

The PRESIDENT said the Charter authorised the Council from time to time to alter "the same Orders, Rules, and Bye-laws," and "to make new Orders, Rules, and Bye-laws in their stead, as the Council shall think most proper and expedient, so as the same be not repugnant to these presents or to the laws of this Our realm." That meant that the Council was the legislative body, and that the students entered on the condition that if the Council chose to alter the Rules they must submit to them.

Mr. WRAGG said that was not according to precedent.

Mr. THATCHER (Solicitor) said he did not think there could be much doubt about the point. No Rule could be retrospective, but the students entered with the knowledge of the Charter, and they must be bound by what had been done in the past. If the Council passed the new Rules his opinion was that the students would have to submit to them.

Professor BROWN thought that when the new Regulations were framed it was distinctly understood thal they would not apply to the students who entered under the old Regulations.

Professor WILLIAMS said he had quite understood that the new Rules would come into force, and he had prepared his men accordingly.

Professor McCALL said that he also had acted on the supposition that the new Rule would be enforced. If there was any hardship it could only apply to the Camden Town School, and it would be only right to make some arrangement of a temporary character for that College.

Professor WALLEY said that in his College it had been distinctly stated in the prospectus that in all probability the new Regulations would come into force for students joining in October last; at the same time he thought that those men who were in the College prior to any movement of this kind being taken should have the privilege of coming up under the Rule. He did not know what might be the practice in other colleges, but in his the students were bound to attend Osteology in the first year.

The PRESIDENT suggested that there might be an instruction to the Examiners that students entered under the old Regulations should be entitled to be examineda ccording to them.

Professor DUGUID thought the new Rule should not come into operation for twelve months.

Professor PRITCHARD said that more than five years ago it was tried to do away with the Christmas examination, but the attempt had not yet succeeded, and he questioned whether that examination would be abolished for a year or two yet. It was now proposed to make another deviation, and he thought it would take more than five years to carry it out. It could not therefore be described as merely a temporary matter.

The PRESIDENT said the Council had the law on their side, and could do as they pleased.

The resolution was carried.

On the motion of Mr. TAYLOR, seconded by Mr. CARTER, Regulation No. 5 was agreed to.

On the motion of Mr. CARTLEDGE, seconded by Professor WALLEY, Regulation No. 6 was agreed to.

On Regulation No. 7, Professor MCCALL suggested that the words "engage in practice" should be omitted, and the words "become a pupil to a member of the College" substituted. He also suggested that the words "in point of time" be inserted after "the following examination," and that after the words "in every such case the student shall," the following words should be inserted:—"return to the College and be in regular attendance on the classes for a period of not less than one month, and he shall produce a certificate signed by the member of the Royal College of Veterinary Surgeons with whom he has served." It had been objected that a student, under the proposed Rules, might remain for an indefinite number of years as an assistant to a professional gentleman, but by the introduction of the words "in point of time" every student would be bound to come back and pass his examination. In conclusion he moved that the Regulation, with the additions he suggested, be passed.

Professor WILLIAMS seconded the motion.

Mr. J. F. SIMPSON was convinced that if this new rule were passed it would inflict an injustice upon those to whom the Council had already granted the diploma of the College; it would make it easier for men to enter the profession. And although he was in no way advocating monopoly, he asked for fairness; and appealed to the Council, in the name of the hundreds and hundreds of struggling practitioners who held the diploma, to reject the rule, and not allow them to be overwhelmed by making rules which enabled men to enter the profession more easily than those who had already passed. He would therefore propose an amendment that all the words after "disjoined" be omitted. He gave the professors at the schools credit for being excellent business men, and men anxious for the interests of the schools; but it was the duty of the Council to legislate for the interest of the whole profession. When the Veterinary Surgeons Act was introduced a pupilage clause was proposed, and the greatest amount of opposition came from those who represented the schools. Why? Because they knew that if the clause were passed the schools would suffer for the first two years. These gentlemen then said the schools could impart to the student all the practical knowledge required to satisfy the examiners. Time has shown that this cannot be done, however good and practical the teacher may be; and the result is that the schools were now—he would not say *blocked* with rejected men—but it was well known that there were a large number of them; and it was for the benefit of these students that the Council were asked to make it easier for a man to enter the veterinary profession. By the proposed new rule he considered it quite possible for men to return to their practical examination again and again, until by mere chance they managed to squeeze through.

Mr. TAYLOR seconded the amendment.

Mr. ROALFE COX suggested, as an addition to Rule 7, or as a new rule: "If a candidate who has been rejected at the practical examination do not present himself for re-examination within twelve months he shall be precluded from re-examination and from admission to the Royal College of Veterinary Surgeons."

Professor WILLIAMS considered that Mr. Simpson had put a wrong construction on what was said by the professors at the time the pupilage clause was discussed. All that they objected to was making that clause compulsory. The Council could make the examination as hard as it pleased. He heartily supported the rule as altered by Professor McCall.

Professor WALLEY agreed with all that had fallen from Professor McCall and Professor Williams. Professor McCall's notice of alteration met the views of all parties, and if it were adopted many heartburnings would be done away with. Personally he did not wish for any unpleasantness to occur between his school and the Council. The action of the professors was a purely disinterested one, for they and not the practitioners would be losers by it. They did not want rejected students kept at the schools year after year. If they passed at the Oral and were rejected at the Practical, by all means let them go elsewhere, and then the practitioners of the country would be benefited. If they were not allowed to squeeze through they would simply go to swell the great body of quacks, for they could not be prevented practising.

Mr. J. SIMPSON said if the rejected men were sent back to the College they would still be unable to obtain any more practical knowledge than they acquired during the first three terms, and in the end he thought the professors would see that it was advisable that those students should obtain practical knowledge before going to the colleges.

Dr. FLEMING thought the examinations should be made, if altered at all, more strict, but what was now proposed would make them easier. By the instalment plan a dull man might get through who would otherwise fail.

Mr. GREAVES was quite certain that the profession generally would approve of the pupilage clause.

The amendment was put and negatived, and the original resolution that the rule be passed with the proposed alterations was then put.

Professor PRITCHARD objected to the first part of the rule, which stated that the "Final Examining Board shall consist of two sections, the first to conduct the Oral, and the second the Practical." Having had some little experience, both in teaching and examining, he was perfectly convinced that that plan would not work. In the majority of instances the two gentlemen who examined the pupils on the Practical kept their minds open until they had an opportunity of dealing with them over the table. He for one, and he believed he was speaking the sentiments of his colleagues, had done so over and over again. He would not undertake the responsibility of deciding whether a man was equal to passing simply from the Practical examination. A candidate was naturally flustered. The questions put to him might be very simple, and, as far as his experience went, the more simple they were the more frequently he was thrown off his guard. A quarter of an hour or twenty minutes was not sufficient time to enable the Examiner to come to a conclusion whether or not the man was properly prepared. Knowing that he was coming up for examination he was all of a sudden asked to examine a horse as to soundness, and became flustered, and an Examiner ought to see him again under different circumstances. He did not think that any Examiner had a right, in duty to himself and to the candidate, to put himself in the position of saying that a quarter of an hour or twenty minutes' examination was sufficient. If a man was marked "bad" at the Practical, what were the Oral Examiners to do with him? or if the Oral Examination was first, and he got "bad," what were the Practical Examiners to do with him? Those who dealt with him in one

examination should deal with him in the other, and he (Professor Pritchard) would not undertake the responsibility of saying whether a man was fit simply from one examination. He would therefore move as an amendment, "That the Final Examining Board shall consist of one section to conduct both the Oral and Practical Examinations."

Mr. WRAGG seconded the amendment.

The amendment was lost—13 voting for it, and 10 against it.

The Rule, with the alterations proposed by Professor McCall, was then carried.

Mr. ROALFE COX submitted to the Council whether it was not desirable that a certain date should be fixed within which the rejected student should be at liberty to come up for re-examination. He would therefore propose that "if a candidate who has been rejected for the Practical Examination do not present himself for re-examination within"—such time as the Council might determine—"he be precluded from further re-examination, and from admission to the Royal College of Veterinary Surgeons."

The PRESIDENT said he thought that would be a new rule, notice of which should be suspended for three months.

Sir FREDERICK FITZWYGRAM said he thought it might be added to Rule 16 or Rule 17.

On the motion of Professor WALLEY, seconded by Mr. MULVEY, Regulation No. 8 was agreed to.

On the motion of Mr. MULVEY, seconded by Mr. TAYLOR, Regulation No. 9 was agreed to.

On the motion of Professor WALLEY, seconded by Mr. CARTER, Regulation No. 10 was agreed to.

On the motion of Mr. MULVEY, seconded by Mr. CARTER, Regulation No. 11 was agreed to.

On the motion of Mr. WRAGG, seconded by Professor MCCALL, Regulation No. 12 was agreed to.

On the motion of Mr. DRAY, seconded by Professor WILLIAMS, Regulation No, 13 was agreed to.

On the motion of Mr. CARTER, seconded by Mr. MULVEY, Regulation No. 14 was agreed to.

On the motion of Mr. CARTER, seconded by Mr. WOODS, Regulation No. 15 was agreed to.

On Rule 16,

Mr. ROALFE COX said it required alteration, because it clashed with Rule 7. If a student did not return to his school he could not give "satisfactory proof" of doing so.

Professor MCCALL proposed that the Rule should read: "A student who is rejected at the first, second, or Oral division of the Third examination, shall not be eligible," etc.

Professor WALLEY seconded the motion, which was agreed to.

Mr. TAYLOR moved that Rule 17 be passed.

Professor WILLIAMS seconded the motion.

Mr. ROALFE COX proposed to add the words: "And if a candidate who has been rejected at the Practical Examination do not present himself for re-examination within twelve months, except in case of illness or other cause satisfactorily certified," he will be precluded from further re-examination, and from admission to the Royal College of Veterinary Surgeons.

Professor MCCALL seconded the amendment, which was carried—15 voting for it, and none against it.

On being put as a resolution, it was carried *nem. con.*

On the motion of Professor WALLEY, seconded by Mr. BARFORD, Regulation No. 18 was agreed to.

On the motion of Mr. PERRINS, seconded by Mr. CARTLEDGE, Regulation No. 19 was agreed to.

On the motion of Mr. CARTLEDGE, seconded by Mr. MULVEY, Regulation No. 20 was agreed to.

On the motion of Professor MCCALL, seconded by Mr WOODS, Regulation No 21 was agreed to.

On the motion of Mr. MULVEY, seconded by Mr. GREAVES, Regulation No. 22 was agreed to.

The PRESIDENT said the next business was to consider a notice of motion by Mr. Greaves, "That the Court of Examiners be composed of members of the veterinary profession only."

Mr. GREAVES said that for many years he had carefully studied this subject. He was satisfied that his proposal would in various ways benefit the profession. It would confer independence and dignity, and be a strong incentive for aspiring members to attain to a higher degree of excellence. The profession was ninety-seven years old, and they should now have courage to put off their swaddling clothes, and try to walk by themselves. One of the very highest authorities in the profession seventeen years ago strongly advocated the same views. Professor Spooner then said: "He would be the very last man to advocate the removal from the Court of Examiners of any of those gentlemen who had so ably supported them at the Physiological, Chemistry, and Materia Medica tables; but at the same time he would say that so long as that pillar of support remained bound to the tree, so long would it require its aid. Remove it, and the winds might blow it, and it might yield to some extent, but its roots would become strengthened by virtue of its self-supporting power, and thus you could throw off the extraneous aid. No more, then, would he admit members foreign to their body after this period to the Court of Examiners." The Bye-laws authorised the Council "to appoint a sufficient number, not exceeding twenty-two persons, to constitute a Court of Examiners," and that of those, "not less than six shall be members of the College." That did not prevent their appointing as many as they liked of their profession, not exceeding twenty-two. The ninth Clause of the Supplemental Charter for 1876 laid it down, "That at the end of ten years from the date thereof no member of the said College save and except the present members of the said Council, who shall not also be a Fellow of the said College, shall be eligible to be a member of the Council or to serve as a member of the Board of Examiners." It would be a sad and grave reflection on the teaching schools to contend that there were no members of the profession fully competent to fill the various offices on the Board. All that was wanted to continue the supply of eminent specialists from the ranks of the profession, was an encouragement to students to keep up and cultivate their knowledge, and that would be afforded by the opportunity of becoming Examiners. He therefore moved, "That the Court of Examiners be composed of members of the veterinary profession only."

The motion was not seconded.

Mr. GREAVES withdrew the other notice of motion standing in his name, referring to the appointment of a Court of Appeal, from the decision of the Examiners, it being ruled that it was contrary to the provisions of the Charters.

Mr. SIMCOCKS withdrew his notice of motion to add a written Examination to the *Viva Voce* and Practical at the Final Examination.

This concluded the business of the special meeting, and the Council at once proceeded to the business of the quarterly meeting.

REPORT OF PROCEEDINGS AT THE ORDINARY QUARTERLY MEETING.

Sir Henry Simpson, President, in the chair.

The SECRETARY read the notice convening the meeting.

The minutes of the last meeting were read and confirmed.

The SECRETARY read the Report of the Finance Committee, who recommended that £300 should be invested in the Three per Cent. Consols.

On the motion of Mr. WRAGG, seconded by Mr. TAYLOR, the report was adopted.

The SECRETARY announced the following presentations to the Library:

"Veterinary Posology," by G. A. Banham.

"Equine Diseases of India;" "Veterinary Surgical Pathology and Practical Medicine," by R. W. Burke, A.V.D.

"Diseases of the Dog," by J. H. Steel.

"Calendar of the Royal College of Surgeons."

On the motion of Mr. WRAGG, seconded by Mr. TAYLOR, a vote of thanks was passed to the donors.

Two diplomas of holders of the Highland and Agricultural Society's certificate were signed.

A letter was read from Dr. Huidekoper thanking the Council for electing him an honorary member.

The SECRETARY read the Report of the Registration Committee.

The SECRETARY read the Report from the Court of Examiners for England and Scotland.

On the motion of Mr. TAYLOR, seconded by Professor WALLEY, Mr. Woodger and Mr. Broad were re-elected auditors.

Appointment of Examiners.

Sir FREDERICK FITZWYGRAM moved, "That in the appointment of the Examining Board one Examiner should be appointed from England, and one from Scotland or Ireland in each table, as far as possible."

The motion was carried by 10 to 8.

For the First Examination.

Mr. Campbell, Mr. Jas. Lambert, and Mr. Simcocks were nominated as Examiners in Elementary Anatomy.

The Ballot having been taken, the voting was: Mr. Simcocks 23, Mr. Campbell 16, Mr. Lambert 11.

The PRESIDENT declared Messrs. Simcocks and Campbell elected.

Messrs. Heaton, Finlay Dun, Stevens and Woods, jun., were nominated as Examiners in Chemistry.

The result of the ballot was:—Professor Heaton, 21, Mr. Finlay Dun 18, Mr. Stevens 6, Mr. Woods 5.

The PRESIDENT declared Mr. Heaton and Mr. Dun elected.

Mr. Walters and Professor McQueen were elected Examiners in Botany, etc.

For the Second Examination.

Dr. Fleming and Professor Vaughan were elected Examiners in Anatomy of the Horse, etc.

Professor KcKendrick, Dr. Yeo, and Mr. W. A. Taylor were nominated as Examiners in Physiology and Histology.

The result of the ballot was:—Professor McKendrick 20, Dr Yeo 18, Mr. W. A. Taylor 14.

The PRESIDENT declared Professor McKendrick and Dr. Yeo elected.

For the Final Examination.

Mr. Banham, Dr. Hamilton (Queen's College), Mr. Lingard (Brown Institute), and Mr. Woods, jun., were nominated as Examiners in Morbid Anatomy, etc.

The result of the ballot was :—Mr. Banham 19, Dr. Hamilton 13, Mr. Lingard 13, Mr. Woods, jun., 7.

The PRESIDENT declared Mr. Banham elected.

A second ballot was taken between Dr. Hamilton and Mr. Lingard, the result being :—Dr. Hamilton 17, Mr. Lingard 9.

The PRESIDENT declared Dr. Hamilton elected.

Professor Pritchard and Mr. J. Roalfe Cox were elected Examiners in Diseases of the Horse, etc.

Professor Duguid, Mr. John Freeman (of Dublin), and Mr. Archibald Robinson were nominated as Examiners in Diseases of other Domesticated Animals, etc.

The result of the ballot was :—Professor Duguid 20, Mr. Freeman 16, Mr. Archibald Robinson 8.

The PRESIDENT declared Professor Duguid and Mr. Freeman elected.

Sir Henry Simpson and Mr. Cartledge were elected Examiners in Practical Examination of Horses, etc.

Mr. Olver, Mr. Woods, sen. (of Wigan), Mr. Archibald Robinson, and Mr. Wilson (Berkhampstead), were nominated Examiners in Practical Examination of other Domesticated Animals.

The result of the ballot was :—Mr. Olver 21, Mr. Woods 18, Mr. Archibald Robinson 7, Mr. Wilson 4.

The PRESIDENT declared Mr. Olver and Mr. Woods elected.

Professor WILLIAMS moved, "That the Board just elected be appointed for a period of five years in accordance with the Bye-laws; and that the salaries and allowances paid to the Examiners in the past be paid to them for a period of twelve months from the date of commencing their duties."

Mr. BARFORD seconded the motion, which was carried.

Obituary.

The SECRETARY read the Obituary.

The PRESIDENT said they must all regret that so many members had been called away, but there was one name which must present itself to all as indicating a terrible loss to the profession. He alluded to Professor Robertson, late Principal of the Royal Veterinary College, London, and a member of this Council. Those who had known Professor Robertson were aware what an estimable man he was in every sense of the term, and how great his loss would be to the profession and to his students. He had begun to put his mark upon the Camden Town institution, and it would be very difficult indeed to fill his place. As an Examiner, before he came to London, he was a thoroughly practical man, who knew what students ought to be, and examined conscientiously and carefully. At the meetings of the Council he gave a fair consideration to every question without passion or prejudice. He (the President) had felt that he would only be doing what the Council wished in at once writing a letter of condolence to the widow, expressing the hope that he might be permitted to attend the funeral as representing the profession. He also directed a beautiful wreath to be forwarded by the Queen's florist, to be placed on the coffin, from the President and Council, in affectionate remembrance. He received an invitation from Mrs. Robertson to attend the funeral, and did so, as did also many other members of the profession. If there had been longer notice he was sure that a still greater number would have attended. He would now move that a vote of condolence be sent from the Council to Mrs. Robertson.

Mr. CARTLEDGE seconded the motion. He had had, he said, the pleasure of Professor Robertson's acquaintance and friendship for very many years, and he did not think he had ever met a more estimable man.

Professor WALLEY supported the motion as representing the College at which Professor Robertson graduated. Had it not been for that gentleman's self-sacrificing generosity he (Professor Walley) would not be holding his present position. On two occasions Professor Robertson was asked to become the Principal of the Old College, Edinburgh. The first time he distinctly refused; the second time he so far accepted as to sit down and write his introductory address, but when he found that he (Professor Walley) was a candidate for the office he at once withdrew.

The resolution was carried unanimously.

On the motion of Mr. J. SIMPSON, seconded by Professor MCCALL, the President, Treasurer, Dr. Fleming, Mr. J. Roalfe Cox, and the Secretary, were appointed as a committee to prepare the annual report for presentation at the next quarterly meeting of the Council.

Mr. THATCHER (Solicitor) gave his opinion that according to Bye-law 58 the books were not open to inspection by any one beyond the President and Secretary, except by order of the Council.

A letter from Mr. Parker, of Patrick, addressed to Professor McCall, was, on the motion of Mr. TAYLOR, seconded by Mr. WRAGG, referred to the Registration Committee.

Professor PRITCHARD asked when the new Rules as altered would appear in print?

The PRESIDENT thought it desirable to have them printed in the new Register in the usual way.

Professor AXE asked if the examinations in April would take place under the new arrangement as to Examiners?

The PRESIDENT said they would.

A vote of thanks to the President terminated the proceedings.

SPECIAL MEETING OF COUNCIL, HELD JANUARY 31st, 1888.

SIR HENRY SIMPSON, J.P., President, in the chair.

Present:—Professors Axe, G. T. Brown, C.B., W. Duguid, W. Pritchard; Dr. Geo. Fleming, C.B.; Messrs. J. Roalfe Cox, M. J. Harpley, W. F. Mulvey, Jas. F. Simpson, J.P., F. W. Wragg, and the Secretary.

The SECRETARY read the notice convening the meeting.

On the motion of Dr. FLEMING, seconded by Professor BROWN, the minutes of the previous meeting were read and confirmed.

The SECRETARY stated that he had received letters from Messrs. Greaves, Perrins, and Taylor, regretting their inability to attend the meeting.

The PRESIDENT said that the meeting had been called for the purpose of confirming the Rules for Examination of Students which had been passed at the last special meeting. He ventured to hope that the proceedings would be merely formal as the matter had been already fully discussed. Should any further alterations be made they would have to begin *de novo*, and the work of the last six months would be entirely undone. The discussion at the previous meetings had been full and ample, and the last one (that on the 18th January) had certainly taken place when a larger number of members of the Council were present than he had before seen.

Mr. J. ROALFE COX asked whether the Rules, as amended, had been reprinted.

The PRESIDENT said that they had not.

Mr. J. ROALFE COX thought it advisable that the Rules should be read.

The SECRETARY read the Rules as altered on the previous occasion.

Professor PRITCHARD said he was inclined to think that one or two subjects were left out that had been in the old curriculum. He should like to ask whether Materia Medica was provided for.

The PRESIDENT said that it was.

Professor PRITCHARD remarked that it was made a small and side subject instead of being a principal one.

Mr. J. ROALFE COX thought that if Materia Medica were otherwise provided, for it would be an advantage.

Professor BROWN said that whether the alteration in the position of Materia Medica was right or wrong, about which he had no very strong opinion, it had been put in its present position after a great deal of discussion and he therefore presumed there was not the slightest chance of any change unless, as the President had remarked, they went over the whole ground again. The Council had already decided that the proper place for the subject was in the third Examination instead of the first. In order to bring the matter to an issue, he would move that the Rules as passed at the last meeting be confirmed.

Mr. W. F. MULVEY seconded the motion.

The motion was put and agreed to.

Professor PRITCHARD said he should like it to be recorded how many members of the Council voted for the resolution and how many did not vote.

The PRESIDENT said that no one voted against it.

Mr. M. J. HARPLEY thought the motion had been carried unanimously.

Mr. JAS. F. SIMPSON asked whether there was any objection in carrying out Professor Pritchard's suggestion.

The PRESIDENT said there was no objection in doing so, but the motion had certainly been carried without a dissentient.

The meeting then terminated.

CENTRAL VETERINARY MEDICAL SOCIETY.

AN ordinary general meeting of the above Society was held at the First Avenue Hotel, Holborn, on January 5th, 1888, the President (Mr. Sheather) in the chair. The following Fellows were present:—Messrs. A. Broad, Caton, Cheeseman, Elworthy, Gibbings, Harrison, Hunting, Ingersoll, Moore, Mulvey, Oatway, Raymond, Rickards, Roots, Rowe, Samson, Singleton, Willis, Woodger, Wragg, and Villar; and Messrs Farrow, Rogerson, Somers, and Wright were present as visitors.

Mr. W. H. Farrow, M.R.C.V.S., of Worship Street, London, and Mr. Arthur Rogerson, M.R.C.V.S., of Camden Town, were unanimously elected Fellows of the Society.

In the unavoidable absence of Professor Pritchard, who was to have delivered a lecture, the President introduced for the consideration of the Society the subject of "Splint Lameness." He described the *post-mortem* appearances of both "recent" and "old-standing" splint; gave a new theory to account for the more frequent occurrence of splints upon the inner side of the limb than the outer side; enumerated the chief causes of the disease, and described his methods of treatment for its cure.

An animated discussion followed, in which Messrs. Mulvey, Samson, Wragg, and Villar took part.

At the February meeting of the Society, held on 2nd inst., the President again occupied the chair.

The Fellows present were Professor Pritchard, Messrs. Alfred Broad, Caton, Edgar, Elworthy, Farrow, Herron, Hunting, Hurndall, Lowe, Moore, Mulvey, Oatway, Rogerson, Roots, Slocock, Walker, Willis, Wragg, and Villar; Messrs. Morgan-Evans, Arthur James, Hunting, and Rogers attended as visitors.

Letters were read from Professor Axe and Mr. Harrison, of Hertford, regretting their inability to attend the meeting.

The consideration of a letter received from the Honorary Secretary of the Lincolnshire Veterinary Medical Association was deferred until the March meeting.

On the motion of Professor PRITCHARD, seconded by Mr. EDGAR, and carried unanimously, the Secretary was instructed to write a letter of condolence on behalf of the Society to the widow of the late Professor Robertson.

It was proposed by the PRESIDENT, seconded by Mr. ALFRED BROAD, and carried unanimously, "That it be submitted to His Royal Highness the Duke of Cambridge, as President of the Royal Veterinary College, and the Governors, that the Fellows of the Central Veterinary Medical Society, having regard to the serious importance to the veterinary profession attending the appointment of Principal to the Royal Veterinary College, respectfully request that the Governors of that institution, in making the appointment, will take into consideration the many excellent qualities, the lengthened experience, and the disinterested and genuine work exhibited by Professor Axe in the advancement of veterinary science."

A very interesting morbid specimen, consisting of the fractured metatarsal bones of a hunter, was sent by Mr. Willows, of Cirencester.

Professor PRITCHARD then delivered a very able lecture on "Stable Management."

The discussion was opened by Mr. WALKER, First Life Guards, who described the process of stable management in the army service.

Mr. EDGAR and Mr. HUNTING having spoken, the further consideration of the subject was deferred until the next meeting.

Professor PRITCHARD gave notice of his intention to bring forward a motion of importance at the March meeting. SIDNEY VILLAR, *Hon. Sec.*

LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

THE usual quarterly meeting of the above Association was held at the Blackfriars Hotel, Manchester, on December 10th, 1887.

Present: Messrs. Thomas Briggs, President; J. B. Wolstenholme, P. Taylor, W. A. Taylor, S. Locke, W. Dacre, Alex. Lawson, J. Lawson, and A. J. Jones, all of Manchester; A. H. Darwell, Northwich; W. Whittle, Worsley; J. E. Eltoft and R. H. McRaith, Lancaster; A. M. Michaelis, Stockport; W. Woods, jun., Wigan; F. Carter, Burnley; A. Munro, Altrincham; R. C. Edwards, Chester; J. Faulkner, Rochdale; J. Hart, Oldham; H. Taylor, student, G. Morgan, and the Secretary, Liverpool.

Apologies for non-attendance were read from Prof. Williams, Prof. Robertson, Prof. Walley, Messrs. Thos. Leather, W. W. Smart, E. Faulkner, J. Marshall, and Chas. Phillips, A.V.D.

The SECRETARY then read the circular convening the meeting.

The minutes of the previous meeting were then read and confirmed.

A letter was read from Mr. F. H. Ridler, tendering his resignation.

An interchange of views then took place between the members and the committee appointed by the Liverpool Association, regarding the amalgamation of the latter with the former association. The terms proposed were agreed upon, viz., that the members of the Liverpool Association be received into the Lancashire Association without the payment of entrance-fee, and that the Lancashire Association hold one meeting per annum in Liverpool.

The terms were proposed by Mr. PETER TAYLOR, seconded by Mr. S. LOCKE, and carried unanimously.

The TREASURER (Mr. W. Woods, jun.) then read his annual report, which in due course will be printed and circulated.

It was proposed by Mr. S. LOCKE, and seconded by Mr. W. WHITTLE, that a vote of thanks be accorded to the office-bearers for their services during the past year.—Carried unanimously.

The elections of office-bearers for the ensuing year then took place.

Proposed by Mr. THOS. BRIGGS, seconded by Mr. ALEX. LAWSON, that Mr. J. B. Wolstenholme be elected President.—Carried unanimously.

Proposed by Mr. ALEX. LAWSON, seconded by Mr. WHITTLE, that Mr. Geo. Morgan be elected a Vice-President.—Carried unanimously.

Proposed by Mr. T. HOPKINS, seconded by Mr. WHITTLE, that Mr. John Lawson be elected a Vice-President.—Carried unanimously.

Proposed by Mr. WHITTLE, seconded by Mr. ALEX. LAWSON, that Mr. Hopkins be elected Treasurer.—Carried unanimously.

Proposed by Mr. W. WOODS, seconded by Mr. JOHN LAWSON, that Mr. Arthur Leather be re-elected Secretary.—Carried unanimously.

Proposed by Mr. PETER TAYLOR, seconded by Mr. JOHN LAWSON, that a letter of condolence be sent to the wife and family of the late Joseph Leather. —Carried unanimously.

Ulcerative Endo-Carditis.

Dr. Dreschfeld in a lecture demonstrated a number of specimens illustrating observations which he made on this subject, and which gave highly important and interesting results.

A patient affected with mitral disease, the result of Rheumatic Fever, which she had three years before she came under notice, suffered for a period of five months simply from slight rise of temperature. Towards the end of that period she became hemiplegic, recovered slightly, and then had a second attack of Hemiplegia, and died.

At the necropsy, old Endo-Carditis was found affecting the mitral valve, and on this were implanted numerous vegetations of more recent origin. The valve was incompetent in consequence of this, but nowhere could there be seen any ulceration. Microscopic examination of a scraping from the vegetations showed the presence of numerous streptococci. By plate cultivations a streptococcus was separated, which on gelatine, agar-agar, and potatoes grew in a peculiar and characteristic way. Injections of this pure cultivation, diluted in beef-tea, into the jugular vein of a rabbit, without previous injury of the aortic valves, produced most extensive and marked vegetations on the mitral and aortic valves, in which the same streptococcus was found. The kidneys showed well-marked infarcts.

Injections of diluted pure cultivation of the streptococcus obtained from the affected valve of this rabbit into the jugular vein of another rabbit produced again vegetations of the mitral valve. The animal became suddenly hemiplegic on the right side, and the *post-mortem* examination showed, besides the vegetations on the valve, a hæmorrhage into the left ventricle of the brain. The blood and the vegetations again showed the characteristic streptococcus.

In the non-ulcerative Endo-Carditis, very few observers had so far succeeded in finding any micro-organisms; whilst in the ulcerative form, several micro-organisms (staphylococci, streptococci, pneumococci, and bacilli) had been found; and the injection of some of these had been followed by slight deposits on the aortic valves. But in all these cases (with the exception of those of Ribbert), a previous injury of the aortic valve was necessary.

The successful experiments with this new streptococcus stamped it as the pathogenic organism of Endo-Carditis.

The PRESIDENT warmly thanked Dr. Dreschfeld for his admirable lecture. He remarked that the cases of Endo-Carditis he had met with had been traumatic.

Mr. DACRE also thanked Dr. Dreschfeld for twice coming before them. He had opened a new field; perhaps they would now look into the matter more carefully than they had done. He gave his experience of Endo- and Peri-Carditis.

Mr. HOPKINS likewise joined in the thanks accorded to Dr. Dreschfeld. In an outbreak in Manchester he suggested that some of the cases were due to micro-organisms.

Mr. PETER TAYLOR also offered congratulatory remarks to Dr. Dreschfeld, and followed with his experience relating to the lecture, and what had been said by previous speakers.

Mr. WOLSTENHOLME spoke of the necessity of forming a combination with the sister profession regarding research in matters of this description.

Other members joined in the discussion. At the conclusion, a very hearty and cordial vote of thanks was accorded to Dr. Dreschfeld and carried unanimously, after which Dr. Dreschfeld replied.

The usual vote of thanks to the President terminated the meeting.

ANNUAL MEETING OF THE LINCOLNSHIRE VETERINARY MEDICAL ASSOCIATION.

THIS meeting took place at the Angel Hotel, Grantham, on January 26th. There were present: Messrs. C. Hartley (Lincoln), D. B. Frear (Uppingham), Vice-Presidents; Capt. B. H. Russell (Grantham), Treasurer; F. L. Gooch (Stamford), Hon. Sec.; W. H. Brooks, Fulneck; W. Cooke, Grantham; J. Mackinder, Peterborough; J. Smith, Huntingdon; F. W. Wragg, London; J. Robinson, Market Deeping; D. Banham, Cambridge.

Mr. J. MACKINDER proposed that Mr. Hartley, the Vice-President, should take the chair. This was seconded by the Hon. Sec. (Mr. GOOCH), and agreed to.

Mr. HARTLEY, in taking the chair, thanked the members for the honour conferred upon him.

A letter was read from the President, explaining his absence on that occasion.

The CHAIRMAN said he was very sorry that the President was unable to be present, for he had done a great deal for the Society during the past year. Mr. Greaves took a great interest in the Association, and he hoped he would be spared for many years to come.

The minutes were taken as read.

The HON. SECRETARY read a number of letters of apology for non-attendance of members and others at the meeting.

The CHAIRMAN called upon the Treasurer to present his statement of accounts for the past year.

A general conversation here ensued as to the retaining of certain names on the roll of membership.

Captain RUSSELL proposed that the Secretary be empowered to write a letter to Mrs. Wyre, of Donnington, conveying the sympathy of the Association on the loss she had sustained in the death of her husband, late a member of the Society.

The CHAIRMAN quite fell in with Capt. Russell's views, and should second the motion.

Mr. MACKINDER supported it; at the same time, with Capt. Russell's permission, he should like the motion altered so that two letters should be written—one to the widow of an ordinary member, as already proposed, and

the other to the widow of Prof. Robertson, who had been an hon. member of the Association.

Capt. RUSSELL would be very happy indeed to so alter his motion as to include both letters. He thought the profession in general had sustained a loss by the death of Prof. Robertson.

The CHAIRMAN endorsed Capt. Russell's remarks, and it was decided that the letters should be written and signed by the Chairman and Secretary.

The presentation of the statement of accounts was then proceeded with.

Capt. RUSSELL said he received from the late treasurer (Mr. Spencer) on June 1st, £10 11s. 2d. Since then he had been successful in collecting £12 11s., thus making a total of £23 2s. 2d. There was about £12 of subscriptions due, and he dare say he could get in perhaps £5 of that. The cash in hand on December 31st was £13 9s. 2d.

Mr. MACKINDER thought the statement of accounts ought to be published, also the names of the members in arrears with their subscriptions. He thought that would perhaps enable the Treasurer to get the money in better. It seemed to him rather a large amount to be outstanding; there was as much money in arrears as they had in hand.

The CHAIRMAN agreed with Mr. Mackinder that there was a large amount outstanding; but the question of publishing the names of members was an open one.

Capt. RUSSELL said they had simply to put into practice their Society rules, and remove the names of members in arrears.

The CHAIRMAN believed in giving members in arrears a certain time to pay up.

Capt. RUSSELL said he had written to each one three times.

The CHAIRMAN remarked that members in arrears were no use to the Association.

Mr. MACKINDER remarked that the members' names who were in arrears were mentioned at the annual meeting, and then only when the statement of accounts were presented.

Mr. WRAGG said the Southern Counties Association sent round notices to the members whose subscriptions were due, so that they had an intimation when they ought to pay. In the Midland Counties Association the Treasurer sent a notice to each member about the first or second of January, stating that the subscription was due. He did not like the idea of posting the members' names who were in default. It was difficult to get members, and when they got them, they must keep them. But at the same time, if they did not pay their subscriptions they were no use to the Association.

Captain RUSSELL explained what means he had taken to inform the members whose subscriptions were owing. Circulars were sent out in July and October.

Mr. MACKINDER said he believed the Norfolk and Eastern Counties Association published a list of members in arrears every year.

Mr. BANHAM observed that they ought simply to carry out their rules.

Mr. SMITH (of Huntingdon) proposed that the rules should be put in force against those members who had not paid arrears before the next meeting.

Mr. WRAGG seconded it, and it was carried.

Mr. MACKINDER then proposed that the accounts be passed.

Mr. GOOCH (hon. sec.) seconded, and the motion was unanimously agreed to.

The next business upon the agenda was the election of officers.

The CHAIRMAN had very great pleasure in proposing that Mr. Greaves be re-elected as President. He thought the Secretary should be instructed to send a telegram conveying the sympathy of the Association to Mr. Greaves in his

illness, and asking him if he would stand for re-election. The Chairman hoped his motion met with the approval of the meeting.

Mr. MACKINDER did not like the idea of entirely confining the officers of the Society to one or two persons. He therefore proposed the present Chairman, who was senior Vice-president in 1887, as President of the Association for the ensuing year. He did not say anything against Mr. Greaves, but on the contrary thought he had done his work remarkably well. At the same time, they had men amongst them in Lincolnshire who were capable of taking the office, and he therefore proposed the election of Mr. Hartley to the office of President.

Captain RUSSELL seconded. He thought Mr. Greaves would be equally pleased with themselves by the election of Mr. Hartley.

Mr. GOOCH supported the motion, which was carried.

Captain RUSSELL said he quite agreed with the proposal to send a telegram to Mr. Greaves.

Mr. HARTLEY (the Chairman) did not expect he was going to be elected President for the year; although both himself and Mr. Frear were Vice-presidents. He thanked the members for his election, and would do his best to render the Association all the help in his power. He would also endeavour to carry out the duties of his office as fully as possible. (Hear, hear.)

The PRESIDENT (Mr. Hartley) said he had great pleasure in proposing that a vote of thanks be given to Mr. Greaves for the manner in which he had carried out the duties of his office during the past year.

Mr. GOOCH said, as Secretary to the Association during the year which was past, he was happy to be able to second the motion. Mr. Greaves had taken a lot of work upon himself in various ways, such as getting papers, etc.

The vote of thanks was agreed to, and it was decided to send the following telegram:—

"To Greaves, Knott Mill, Manchester.—Meeting offers sympathy, hopes for speedy recovery, unanimous vote of thanks accorded.—HARTLEY, Granthan."

It was also agreed that a letter should be sent as well.

Mr. BROOKS (Fulbeck) said he begged to propose Captain Russell as Treasurer again for the ensuing year.

The PRESIDENT seconded, and Mr MACKINDER, remarking that they could not have a better one,

The motion was carried.

Captain RUSSELL said he should be very glad to undertake the duties of Treasurer for another year, and he hoped to get in the greater part of the back subscriptions.

Mr. MACKINDER proposed that Mr. Greaves should be elected as vice-president. This was seconded and agreed to.

Capt. RUSSELL proposed Mr. Frear's re-election as vice-president; also that Mr. F. W. Wragg should be appointed a vice-president.

Mr. GOOCH seconded, and the motion was carried *nem. con.*

The PRESIDENT said they must now proceed to the election of a Secretary, who was the hardest-worked man in connection with the Association. He proposed that Mr. Gooch be asked to take the office for another year, and thanked for the courteous manner in which he had performed the duties.

Mr. FREAR seconded, and hoped Mr. Gooch would continue in office.

Capt. RUSSELL said whenever he had come into contact with the hon. sec. during the past year he had been struck with the very efficient manner in which he performed his duties. (Hear, hear.)

The motion was then put from the chair and carried.

Mr. GOOCH, in again accepting office, thanked the members for the honour conferred upon him. He had scarcely sufficient time to devote to the work; but still what he could do he was willing to give for the benefit of the Associa-

tion. He should endeavour to carry out his duties in a similar manner to that of last year, and also try to get new members for the Society.

The next item on the paper was proposing of new members.

The PRESIDENT said he should like to have seen at least half a dozen new names put forward.

There being no proposition, the PRESIDENT said they now came to a very interesting part of the business, which was to ask Mr. Frear to read a paper which he had prepared for that meeting.

Before the reading of the paper, Mr. J. MACKINDER, rising, said he had intended giving notice to the Secretary, prior to the annual meeting, of a very important subject which he wished to bring forward. That was, the election of a member on the Council. Some of them would remember that three years ago they entered into an arrangement with several other societies, that each should support the other in the election of a member to the Council; each society to have the nomination of a member every fourth year. They had been enabled to make other members of the Council, and it was now their year, in connection with the other societies, to nominate a member. He had pleasure in putting forward their first president, Capt. Russell, as nominee for the year, which, in conjunction with the other societies, he hoped, met with their approval. He need scarcely mention the names of the societies, but he was sure they ought to do all they could to support Capt. Russell as their nominee for membership to the Council. Capt. Russell was one of the hardest working members of their Society, and he was also a practical man, and doubtless would prove of great use upon the Council as the representative of that district. In conclusion Mr. MACKINDER said: I have very great pleasure in proposing that Capt. Russell be named by the President for the year as our nominee for the Council.

Mr. GOOCH said he had pleasure in seconding the motion, if Capt. Russell would only consent to represent them.

Mr. WRAGG remarked that there were seven men to be elected on the Council this year.

Mr. MACKINDER said it was nothing but fair that the other societies included in the agreement should now support them (the Lincolnshire Association).

The PRESIDENT said he supposed the proposition was strictly in accordance with the arrangement entered into with the other societies. He was not one of the partners to the agreement, so he could not say who came first or last. He hoped they were quite sure of being perfectly regular.

Mr. WRAGG said the President would see a moiety of the cost of sending out the circulars for the election of the members to the Council in the accounts both last year and the year previous.

The PRESIDENT asked if there was any other name to propose; and there being none, the motion was put and unanimously agreed to.

Captain RUSSELL said he hoped, in a question like that, every member had carefully considered the decision aimed at. If they considered he was a fit person in their own minds to carry out the duties, well and good; but if any gentleman had any hesitation he ought to speak before it was too late to say so. He was not ambitious, but always preferred giving way in anything with which he was connected, if by doing so he could make way for a better man. Well, if he were elected to the honourable office as a member of the Council, he should be ambitious to carry out the duties in as efficient a manner as possible, and should consult the views of the members of the Lincolnshire and other associations. They must remember this, however, that as a member of the Council he was but a unit, and could not promise to do anything single-handed. He would simply be one man among many, but they might depend upon his voting and speaking in support of any resolution in accord

with their views. He pledged himself to do his utmost for them, but at the same time by himself he could do nothing.

Mr. WRAGG thought the matter should be placed before the other associations at the earliest opportunity.

The SECRETARY said he would write immediately. Perhaps Mr. Wragg could tell him whether there was anything else to be done, such as the sending out of circulars and so on.

Mr. WRAGG said that circulars would have to be sent out to the separate associations. Mr. Simpson, of Maidenhead, would take care that the arrangement was brought under notice.

The PRESIDENT then called upon Mr. Frear, who read the following paper :—

MR. PRESIDENT AND GENTLEMEN,—It is with very great diffidence that I rise to respond to our Secretary's invitation to read a paper, the subject being

SOME DISEASES AFFECTING FOALS.

I must crave your indulgence inasmuch as the few remarks I have to make are principally of a practical nature, and have been put together during a few hours snatched from the hurry of country practice. Still, I venture to hope that the subject will commend itself to Lincolnshire veterinary surgeons, situated as you are in the heart of the finest breeding country in the world, whether for hunters or shire horses, and I trust that it will elicit a good discussion, and that we shall all be benefited thereby. Time alone will not allow me to enter into all the diseases that foals are liable to, but I will confine myself to what I consider the principal, and the first to which I shall call your attention is Diarrhœa—commonly known as the White Scour. Diarrhœa of foals, from my own observation, is very frequently a serious matter, especially as the veterinary surgeon is frequently not called in until the malady has taken firm hold, and but little chance is left to assist to a recovery. The Diarrhœa is usually the first symptom noticed ; evacuations are frequent, fluid of a light colour, and some smell. The appetite becomes fickle, foal unusually recumbent ; when made to rise, perhaps goes to the teat, as though ravenous, but sucks little. If the Diarrhœa is not soon checked emaciation rapidly follows, and the animal dies. The cause is undoubtedly to be looked for in the milk of the dam (although exposure and unsanitary surroundings are predisposing causes) ; and it frequently arises from exactly reverse conditions. Mares that have lived the winter on food of an innutritious character are just as likely to have their offspring suffering from Scour, as the mare that has been fed during the same period on highly nitrogenous food. Working the mare shortly after foaling, as many do, and keeping her away too long, directly her head is set for home, away she goes, anxious to get her udder relieved ; and the foal, eager to fill his belly, overdoes it, gets Diarrhœa, and a good thing for him if it does not last too long. To the milk we must look for the cause, and treatment will be of little use to the foal until, by medicine and altered diet, we have materially changed it. Our first inquiries, therefore, should be as to the condition under which the mare has existed for some time previous to foaling. If, and it is often the case in my practice, the dam has been living well, I invariably give a full dose of aloes, order exercise, and the food to be changed as much as possible. To the foal, according to age, if seen early, I give castor oil combined with a stimulant, peppermint being a favourite with me. A powder consisting of equal parts of soda carb. of magnesia, or soda, or mag. carb. ginger and p. rhei. The dose, being from 1½ to 3 or 4 drs. is useful, if Diarrhœa continues. If much irritation and pain exist, I have seen benefit from the use of chlorodyne 30 m. to ½ drs. ; warm rugs to belly and injections of starch gruel, or cold linseed tea, or rice-

water. Whilst the mare is in physic, I insist on the udder being stripped as much as possible and the strength of the foal kept up with raw eggs, well whisked, fresh cows' milk sweetened, or gruel made of cooked wheat-flour. If the mare has been living the reverse of this, a change to better diet is advisable—four or six ounces of mag. sulph., or six or eight ounces of ol. lini., may be given two or three times in a bran mash, but I never hesitate to give a dose of physic. I should have liked to relate one case where the mare was unmistakeably the cause of all the mischief. In May, 1885, I was requested to see a valuable cart foal four or five days old, said to be purging; and so it was. The mare had been working up to date, was fat, and one hind leg showed traces of an attack of inflammatory Œdema. As no alteration had been made in her diet, I directed it to be done, and gave her aloes, eight drachms, treating her and foal, whilst this was acting as already described. After this had ceased the foal returned to the milk, but Diarrhœa, though improved, continued. Ordered mare entire change of food, and gave her soda sulphis and gentian twice a day. Tried alkalies and vegetable astringents; and as these had no permanent effect, gave dilute nitro hydrochlor. acid. Some improvement followed this, but soon a complication appeared; viz., Rheumatism. Stimulating liniments and blisters externally: Salicylate of sodæ, liq. arsenicalis potas., bicarb. and colchicum. Colchii. failing to alter things, I suggested to the owner to wean it, but he sadly wished to try a little longer. At last, however, the foal became such a miserable cripple, and I advised him to knock it on the head. He then weaned it; in a month it was sound, except for stiffness along the neck, which still remains. The mare was put to again, turned out all next winter, fed well, and the foal of the year never ailed. Where altered diet and medicine fail to cure, I strongly recommend that cow's milk be substituted, and the foal enticed to eat crushed bran, oats, etc.

We meet with another form of Diarrhœa in foals that have been recently, or for some little time, turned out. And it arises from the grass being too succulent, or in some instances from chill or exposure to storms, frosty nights followed by wet. The foal is found with back up, coat steaming, tongue furred, breath offensive, loss of appetite, and purging—watery and stinking fæces. Here again I would recommend castor oil, combined with a stimulant, and followed by a dose of æther chlor. and æther nit. If pain exists tinct. op. and chlorodyne; have him comfortably housed, and rubbed dry and warm. Have seen much benefit by well rubbing the belly with stimulating liniment or mustard, and then winding a small blanket, previously heated, round the body, and secured with stitches or skewers. Starch injections are also useful. If no relief is obtained, small doses of brandy with eggs, or wheat flour gruel. As the mare's udder is usually relieved, allow exercise, and a mild aperient, and a change of food for a few days. Dry barley is a *sine qua non* with breeders in my neighbourhood. In this, as in the previous form, I think medicine should be given with discretion, and the *vis medicatrix naturæ* allowed a chance.

Arthritis, or Joint Evil, is a disease absolutely confined to young stock, as it only appears during the lactation period. A great difference of opinion appears to exist as to the cause of this troublesome and invariably fatal malady; one authority contending that it is due to an altered condition of the milk of the dam; another that it is owing to exposure to colds and chills lying in damp pastures, etc.; others, to a deficiency in the calcareous salts, particularly the phosphates, and to a scrofulous diathesis. At page 725 of "Fleming's Obstetrics," it is reported that Bollinger, a French veterinary surgeon, is strongly of opinion that it is Pyæmia, commencing with purulent Inflammation of the umbilical vein; and lays great stress on the want of care usually bestowed on newly-born domesticated animals—often lying

with an open wound in all kinds of filth; and with this opinion I am strongly inclined to agree, at the same time admitting the previously-mentioned probable causes to be predisposing, especially wet and exposure. It has been my lot to see many cases of "Joint Evil," and I have seen them occur in foals whose dams had carried them and brought them forth under every conceivable difference of diet, location, etc. And it certainly occurred to me, long before I had the good fortune to come across Fleming's invaluable work, that it was due to blood poisoning, and that the primary cause existed in the umbilicus, especially as I had noticed that many foals with joint diseases had Œdema, and sometimes purulent discharges from that part. As far as my experience goes, treatment of Joint Evil pure and simple is useless. I always did think so, but on reading Bollinger, in making a *post-mortem* examination on an animal that died of this disease, I found that there was Purulent Omphalitis, Thrombo-Phlebitis, with Thrombosis of the portal vein, Fibro-Purulent Arthritis of the stifle joints, and Purulent Periarthritis, Purulent Tracheo-Bronchitis, Embolic Infraction of the Lungs, commencing Endo-carditis of the mitral valves, and generalised Icterus; if they have half this, I cannot see how a cure is possible. It certainly goes to prove that the disease is due to a poisoned condition of the blood, and if any of you make up your mind that your patient is suffering with the aforesaid complications, have it destroyed at once. Have said nothing at present about symptoms, but first there is difficulty in moving, followed by great lameness, with swelling of one or more joints, evidence of great pain, loss of appetite, rapid wasting, and foal usually recumbent. If seen early, and the owner is anxious for treatment, warmth and comfort are first to be thought of. Authorities recommend stimulating liniments or blisters to be applied to the joint or joints. Should abscess appear in joint, open freely, and dress with antiseptics—as acid carbol. and glycerine, and salicylate of soda, cod liver oil and quinine, to be administered; and opium, aconite, or similar pain killers, but in none of them have I much faith. However, something may, and, I think, can be done towards preventing it, by keeping the dam in good health up to time of foaling, paying strict attention to clean linen and general surroundings, careful tying of umbilicus, or where it breaks off short, and, tying not admissible, sear up the end with a hot iron, or touch it with nitrate of silver or sol. corrosive sublimate, or carbolic acid, and repeat if necessary; and by these means I think we may prevent some from going wrong.

When I am satisfied that the patient has Arthitis, the mare has a dose of physic, and as early as possible is sent to work. A few words about Umbilical Hernia, or Exomphalos. This is not, as a rule, a serious condition, and often spontaneous recovery takes place. However, there are many cases where the aid of the veterinary surgeon is sought, and it is to the treatment of Umbilical Hernia that I more particularly wish to call your attention. It may be congenital, or acquired, and there is also, as I am well aware, hereditary predisposition. The congenital form is produced during fœtal life—the accidental by sudden or violent exertion, frequently neighing, and is occasionally seen after colicky pains, etc. Treatment: In the first place it is well to wait until the foal is weaned, when, should the Hernia still remain, careful examination must be made, and before ordinary methods of operation are decided upon, we must be quite certain that there is no adhesion; this being determined, we proceed to use the best means we know of to reduce it, and now what are they? Up to this last year I have operated on many colts in one and the same way, *i.e.*, by ligature, and with good results; but I had a case this last summer, which, through my own fault, diminished my faith, and caused me to seek for further information. The result of this search was that many and varied kinds of treatment were adopted, each vaunted by their respective advocates as infallible. But before going any further, I should like

to mention the case which modified my belief in the ligature. The subject was a thoroughbred colt, with a large rupture—could get three fingers into the hole in the abdomen. Recommended operation by ligature, but must tell you I cured a small rupture on this colt's own mother the previous year by twice blistering with biniodide of mercury ointment. Operated as usual, two skewers and ligature of wax-end, and as I quite thought successfully; but on his return to the box, he at once commenced to walk round and round.

This continuing for some little time, it occurred to me that there was something more inside the ligature than I had bargained for; so stopped his work and cut the string. This altered matters, and beyond considerable œdema, nothing untoward happened; but it taught me something, for when the swelling had—with fomentation, hand rubbing, etc., subsided, the Hernia was reduced to half its original size, and in a short time the application of a truss cured it. Now comes the result of my enquiries. I have read of sulphuric acid and nitric acid being applied with success, and Capt. Russell told me that he had used the former, and that Mr. Wyer, of Donington (who, I am very sorry to hear, has gone over to the majority), depended entirely upon the application of sulphuric acid. I saw this gentleman at our last meeting, at Louth, and he said that for some time it had been his sole treatment. His *modus operandi* was, without casting the colt, to rub equally over the whole surface of the enlargement a sufficient quantity of sulphuric acid. This sets up a considerable amount of tumefaction, which pushes the contents of the sac back into the abdomen, and the resulting eschar completes the cure. On asking him about untoward results, he answered, "I never had a failure."

The French recommend nitric acid, and this is applied by means of a spun-glass brush, or cotton wool on a glass rod (the hair having been previously removed) round the base first, then over all. For large tumours it should be rubbed with friction for three to five minutes; of course, less quantity and less rubbing for smaller tumours. It naturally occurred to me that there was great danger of sloughing and protrusion of intestines, but they say that accidents rarely happen. Constriction of the sac by clam, as well as ligature, is largely resorted to, and Mr. Olver, of Tamworth, recommended me to use a clam similar to this [instrument produced], saying that it was his only method of treatment, and that he had no failure, whilst others stand fast by the truss. Certainly, where the colt has been handled, and can be attended to, especially if he be a well bred one, I should recommend the truss—different patterns, according to different opinions. At the same time it has its drawbacks; and the first cast foal I come across with Umbilical Hernia will have a dose of sulphuric acid, as it appears to me to have a good deal to recommend it, particularly if it can be effectively applied without casting. I also intend to try the clam, and if any one here is in the habit of using such an instrument, I for one shall be glad to hear something about it. Some recommend modern clams, but the result is the same: hypo-injections of salt and water. Scrotal Hernia is scarcely a disease of foals, as it frequently returns in a few days. Should it be noticed later on, castration is the only cure. Have operated on two by covered operation in my life, one by separating skin, dartos, etc., and applying clam; it had tetanus, but ultimately did well. The second I placed a long clam over the whole lot, and the operation was a decided success. One more case which cannot be classed with *diseases* of foals, but abnormalities, and I have done. Some of you may remember its being reported by Prof. Axe, from a few notes supplied by me. The subject was a cart foal which I was requested by the owner one Sunday night in May, 1885, to see. On my arrival, he (the owner) said, "We have the queerest thing here that ever you or I saw." On entering the box, I saw a well-developed filly foal, and, on looking closer, found that she was the possessor of a mammary gland as large as a mare's with first foal, and teats about the

size of the first joint of my forefinger, and from them I extracted about a pint of what looked like, and ultimately turned out to be, milk. Thinking it of some interest, I sent part of the fluid to Prof. Axe, and he not only very kindly examined it, but reported that it contained all the elements of milk. I had never seen anything like it before, nor since, and although early lactation has been occasionally reported in infants, this case, so far as I know, is unique in veterinary practice. Nothing was done to the foal, the gland gradually got less, and at the present time looks the same as any other."

At the conclusion of the reading of the paper, the PRESIDENT complimented Mr. Frear upon his essay. At that time of the year, being a practical subject, it would no doubt give rise to a good discussion. He should be very pleased if Mr. Brooks would open the discussion. He did not ask Mr. Wragg, as they had no foals in London. (Laughter.)

Mr. MACKINDER thought Mr. Frear must have gone deeply into the matter to have produced such a paper, and he congratulated him upon his success. Proceeding to remark upon the subject of the paper, he said they had in their district a great deal of Joint Evil. Undoubtedly the cause was that pointed out by the essayist, and his (the speaker's) method of treatment was exactly as recommended. In Umbilical Hernia, however, he adopted a much more simple instrument than that shown by Mr. Frear. It was simply a piece of ordinary blacksmith's iron, with holes made by horse nails, and drawn up the same as they would a pig-ring.

Capt. RUSSELL inquired whether it would slough off.

Mr. MACKINDER replied that it would after a time. It had never to be taken off, but would come off by itself. Upon the subject of Diarrhœa in foals, he believed the principal cause was in keeping them up too long, and then turning them out. The change of food they got produced the disease. He used antacids in some cases, as there was very often great acidity of the blood, which generally passed off. In a great many cases astringents were useful. For diseases of the bowel in foals he recommended binding up.

Capt. RUSSELL was sure they would become tired of hearing his voice, as he had been upon his legs five or six times already. He had heard a large number of papers read in connection with that Society, but the one they had heard that morning was upon a subject of some considerable importance. It was a paper of good sound practical value. Now, with regard to the diseases Mr. Frear had touched upon, he agreed with him very much as to the treatment of Scour; castor oil was a good medicine to check the evil. Aloes might be given with much satisfactory results in a good many cases, but he was inclined to think that it should be used with caution. It was the greater kindness, however, in extreme cases, to put the animal out of misery altogether. He noticed a remark of Mr. Frear's with reference to the preparation of the mare previous to foaling, and he quite approved of it. He thought sometimes that if veterinary assistance was called in earlier, it would prove of immense service to owners of cattle. And in other cases, his experience proved that in simple affections, in 99 cases out of 100, the animals were far better left alone. He quoted instances in support of his contentions. With regard to Umbilical affections, he believed in the system adopted by the late Mr. Wye, viz., that of using sulphuric acid. It ought to be rubbed in; and he could not call to mind a single instance of Hernia where the treatment had proved ineffectual. Scrotal Hernia was better left alone. He then proceeded to describe his method of castration.

Mr. GOOCH quite agreed with Mr. Frear with regard to patent clams, and the use of caustic. He thought Arthritis was in some instances hereditary.

Mr. SMITH (of Huntingdon) was much struck with Mr. Frear's description of the filly foal having a mammary gland. He dwelt upon the formation of

multiple abscesses, and said with respect to the treatment of Diarrhœa, he was inclined to believe that mustard was more safe.

The PRESIDENT had known of good effects from pepsines, followed up by cod liver oil in Diarrhœa. He did not dispute the claims of sulphuric acid, as advocated by Captain Russell in Umbilical Hernia, but in the case of open wounds there was nothing better than binding, provided that the ties were of sufficient thickness. Of Scrotal Hernia, he had never come across a case.

Mr. WRAGG was in favour of tincture of camphor in cases of Diarrhœa. It was also good in Influenza.

Mr. BANHAM said with regard to Arthritis he had no experience in his own district. But his opinion upon the subject was that it was due to non-nutrition of the tissues during the period of gestation. He had never had an opportunity of following the period of gestation in mares, but he had of sheep. As most of them were aware, it was the custom on some farms to feed the ewes up for a month or two to strengthen them, as they said, before they were put to the tups, and then to allow them to fall off a bit until they were about to lamb, when they were pushed on again. Now, he thought the whole of that was a mistake. During the period of gestation the animal's strength ought to be kept up, as the disease under notice, or at any rate some of them, were due to weakness of the dam. On the subject of Umbilical Hernia, sulphuric acid might be useful, he admitted; and with regard to Scour or Diarrhœa in foals, in most of the cases where he had been called in the mare had been worked, and the foal kept without milk for some hours. If they took the trouble to milk the mares, they would find in a great many cases that it would save after effects. As to treatment, well, he had found antacids or alkalies equally good.

Mr. FREAR, replying upon the whole discussion, said he should like to ask Mr. Mackinder how long he allowed his clam to remain on?

Mr. MACKINDER replied, sometimes a fortnight or three weeks, and then let it drop off.

Continuing, Mr. FREAR said Captain Russell, he thought, tried matters very much the same as himself, so that he had nothing to say to him.

Captain RUSSELL proposed a vote of thanks to Mr. Frear for his paper, and in doing so wished to offer a remark upon the use of camphor. He always used it in his household, and considered its use equally as beneficial to animals as to human beings.

Mr. GOOCH seconded the vote of thanks, observing that he had learned a great deal from the paper, and thought Mr. Frear had taken up his subject in a thorough and exhaustive manner.

The vote was then unanimously accorded, and suitably acknowledged by the essayist.

A conversation ensued as to the next place of meeting of the Society. The merits and demerits of Doncaster, Gainsboro', Boston, and other towns in the county were each and all brought forward; it being generally held up as a necessity that there should be a good railway connection with the place selected.

Finally, Captain RUSSELL proposed Lincoln. Mr. SMITH seconded, and it was decided that the next gathering of the members of the Society should take place in that city.

Mr. SMITH (Huntingdon) promised to prepare a paper, which he would read at the next meeting.

The concluding item in the way of business was the exhibiting by the members of many interesting pathological specimens.

Captain Russell produced something taken from the esophagus of a horse which had died at the age of thirty-four years.

Mr. GOOCH mentioned that he had a curious specimen at home of two embryo calves.

The proceedings terminated with a vote of thanks to Mr. Hartley for presiding.

The members afterwards dined together at the Angel Hotel, the President in the chair, and Mr. Frear occupying the vice-chair.

YORKSHIRE VETERINARY MEDICAL SOCIETY.

THE annual meeting of the Society took place at the Queen's Hotel, Leeds, on the 27th of January, the President, Mr. Phillip Deighton, in the chair; the following members were also present:—Messrs. Geo. Carter, W. Lodge, H. Snarry, T. C. Toope, Hanson, J. S. Carter, Geo. Whitehead, A. W. Briggs, R. H. Robertson, Chambers, H. Cooper, Jas. Scriven, Anderton, Smith, and Axe.

Apologies for non-attendance were received from Professor Williams, and Messrs. Fletcher, T. Greaves, Pickering, Bale, Danby, Bowman, and Dray.

In consequence of the decease of the Secretary, Mr. Wm. Broughton, the Treasurer read the minutes of the previous meeting, which were confirmed.

The election of Secretary was then proceeded with, and after a discussion as to whether the dual office of Secretary and Treasurer should be held by one gentleman, it was ultimately carried unanimously that Mr. Greenhalgh be elected Secretary, and that Mr. J. E. Scriven be Treasurer in place of Mr. Greenhalgh, who resigned that office.

Mr. MASON nominated Mr. McCormick, of Leeds; and the PRESIDENT nominated Mr. Ridley, of Bellerby, as members of the Society.

Mr. ANDERTON made a few very eulogistic remarks anent the character and capabilities of the late Secretary (Mr. Broughton), who had been connected with the Society since its formation, and had fulfilled the office of Secretary for upwards of twenty years. He proposed that the sum of £50 should be granted out of the funds of the Society to the family of the deceased gentleman as a token of the respect in which he was held, accompanied by a letter of condolence. Mr. B. SMITH seconded the proposition, which was supported by several members, and ultimately carried unanimously.

Mr. GREENHALGH proposed that, "The meetings of the Society should in future be movable from town to town in the county, with the exception of the annual, which would be as well always held in Leeds."

Mr. TOOPE seconded, supported by Messrs. Carter, Lodge, and others.

The proposition was carried, and York was decided upon as the fixture for the next quarterly meeting.

Two or three interesting cases were then mentioned by members, after which the President proceeded to read his Address:—

GENTLEMEN,—You have done me the high honour of electing me to fill for the forthcoming year the presidential chair of your Association. I thank you sincerely for this mark of confidence and esteem; and, in accepting the position, I assure you I do so with many misgivings as to my ability to discharge properly its duties. Indeed, I cannot hope to discharge them in the same satisfactory manner which our late worthy president did.

And when I heard of the death of our late but esteemed secretary, I felt that I was placed in a still worse position, as he was always most courteous and obliging with various little hints and suggestions. I am afraid the Yorkshire Veterinary Medical Association will greatly feel the loss of our faithful friend. You must not expect a very elaborate or scientific address from me, as the facilities in the country are very meagre compared with our townsmen,

who can meet each other and attend the various scientific lectures which are constantly being given in towns. Few arts or sciences, if any, have undergone greater development during the last fifty years of her Majesty's reign than that of veterinary surgery and medicine, and we are rapidly following in the footsteps of our medical friends, and recognising their medical treatment as being applicable to our patients in many cases.

We, too, have looked upon anæsthetics, the antiseptic treatment of wounds, the discoveries of the part played by micro-organisms in the production of disease and in the preventive measures called into operation, such as disinfection, isolation, and inoculation, and welcome their introduction with gratitude and pleasure. We, too, have signalised the startling additions to veterinary knowledge, and our columns show increased signs of unabated energy in the profession, mingled with more care and painstaking in practice and veterinary reasoning than at any prior period.

We may look forward with growing anxiousness and hope to have success attending the treatment of hitherto almost hopeless forms of disease and injuries. I may call the student who has embraced and entered the profession to remember that he has an honourable duty to fulfil, a calling that may be all but what he expects in after life. But with patience, hope, and perseverance as a stimulus, he can more easily battle with emergencies and gain a complete victory over the hard and studious duties.

It is very questionable if our profession sooner or later does not equal the position of our medical friends, for who is more likely to inspect the nuisances arising from the decomposing materials of our farms and stables? and who is more likely to give a good sound opinion regarding the whole hygienic conditions respecting agricultural holdings, or the construction of stables for the benefit of the public or the animals that occupy them, than a member of our profession? And I hope the time will come when, with union and an invincible determination, some of our members will be veterinary officers of health.

Let us put our shoulders to the wheel and confidently unite in our endeavours to do justice to our fellow men, in whatever sphere of our profession we may be called to.

Gentlemen, just one word regarding the sale of meat. You must take it for granted that I do not advocate the wholesale exposure of meat unfit for human consumption, nor do I positively condemn the sale of animal food, unless it has been thoroughly and professionally inspected by a veterinary surgeon.

I cannot understand how a medical officer of health, or the nuisance inspector, of this date, can state clearly the condition of a carcase when he has had no practical or yet theoretical knowledge of the optical appearance of morbid or healthy tissues of our domesticated animals.

I suppose we shall be obliged to contend with the Court until all the contagious diseases are scheduled under the Contagious Diseases Animals Act. And even then, I suppose, we shall not be exempt from Court obligations. I am referring now more especially to Tuberculosis, being an important and practical part of my address.

We are all aware that Tubercle in its early stages, and sometimes in a well-marked history, how difficult it is to arrive at any definite conclusions regarding this malignant affection.

Now, I am told that Tubercle of the lung can positively be diagnosed by the aid of the microscope; and a friend of mine recites a case, of which he has submitted three inoculated tubes of sterilised gelatine for my inspection, which I present, obtained from the sputa of a heifer two years old, previous to slaughter.

Now, if this is correct, and I have not the slightest doubt but what it is, how invaluable an instrument the microscope is, when we know we have at

hand by minute but simple investigation a positive aid to a correct diagnosis of such an insidious disease as Tubercular Phthisis, which is such a scourge to the country!

We should be placed in a position to say without hesitation when we have seen the micro-organisms, as to our results of treatment.

Tubercular disease has demanded the closest investigation in relation to public health, and owing to the allegations during recent years, that the use of the milk of Tuberculous subjects was calculated to induce that disease in the human subject, it has become imperative that the medical officers should maintain a general supervision over the health of the country, and to guide the sanitary authorities in their action. But while we have on the one hand the serious fact that a great number of our milch cows are affected with this disease, we have on the other hand the more hopeful aspect of the case, that so far we have no positive proof of Tuberculous infection in milk itself when imbibed by the human subject.

Bovine Tubercle is very easily conveyed to fowls, and it is a well-known fact that its virulence increases so far as the fowl and rodent species are concerned, these animals becoming more susceptible to it by a continuous inoculation, and developing it in an exceptionally short period. More could be said about Tubercle, but the time is short, and I do not want to detain you longer, or excite your patience to indifference.

I will pass on to another subject that has not been considered, or at least received that amount of attention from our leading professional men, nor has it been mentioned particularly by the Humane Society or the Non-Vivisectionists, for in the case of the former, their thoughts have been engaged in another direction, viz., that of Pathogenic Organisms, which, I suppose, will exist until it has reached its limits, and the latter, regarding our profession, did engage their intellectual reasoning for a while on the subject of docking. But the excitement was naturally evanescent, and left stillness in possession. Much has been said *pro et con* about the amputation of the tail; but I will draw your attention to a more barbarous and cruel proceeding than that of docking—extracting the temporary incisors for the purpose of forwarding the growth of the permanent ones, so that the animals may appear older than they really are. This operation is not usually resorted to in practice by members of the College, who might allay the pain to a certain extent by their professional knowledge, if they wished to participate in this illegal, inhuman action; but by grooms, blacksmiths, and horse-breakers, who subject the animals to this cruel process.

If the permanent incisors do not appear sooner or later to their satisfaction they proceed to carve, cut, pare, and burn the buccal membrane and gums over the seat of the supposed tooth, and in the case of the male over the seat of the canine teeth.

Now, gentlemen, which of the two operations should be thoroughly eradicated from the civilised world, and which of the two should receive the most attention and condemnation from the profession or Humane Society? I leave the query for your consideration.

From a practical point, veterinary surgeons are often placed in a position that warrants great caution when giving a certificate of examination regarding age, for often there are conditions existing which lead to suspicions that the teeth have been tampered with. Further, the animals are bought at an age when they are expected to perform work which, if the teeth have been drawn, are unfit and unable to do so. The result of this is, the horse breaks down under the severe strain, and you, who recommended him are either precipitated into litigation or blamed for a supposed wrong calculation of the age.

This condition of things wants a thorough investigation and abolishing

altogether by some strict method, and an early abolition of this premature extraction will, I certainly think, be hailed with pleasure by most of us.

The usual vote of thanks was accorded to the President for his address, and the meeting terminated.

The annual dinner was dispensed with on this occasion, in consequence of the decease of the late Secretary. W. F. GREENHALGH, *Hon. Sec.*

ROYAL AGRICULTURAL SOCIETY.

AT the monthly Council meeting, held on February 1st, Sir JOHN THOROLD reported his election as Chairman for the year. The death of the late Professor Robertson, Principal of the Royal Veterinary College, having been officially announced to them, the Committee recommended that a letter of condolence with the family be written on behalf of the Society. They also recommended that Mr. Chandos-Pole-Gell and Professor Axe be added to the Committee.

Professor BROWN had presented the following report:—

Report on the Contagious Diseases of Animals in Great Britain during 1887.

Pleuro-pneumonia.—According to the weekly returns published in the London *Gazette*, during the past year there have been 618 outbreaks of Pleuro-pneumonia in Great Britain, or sixty-five more than in 1886. Although there has been this increase in the country generally, it has not been equally distributed, for there has been a decrease of thirty-one in the number of outbreaks in England, while there has been an increase of ninety-five in Scotland, and one outbreak was reported in Wales, where the disease did not exist in the previous year.

In England it was most prevalent in York (West Riding), the Metropolis, Lancashire, Essex, and Kent. The West Riding was the only county in England in which there was any material increase, and there the outbreaks rose from twenty-one in 1886 to fifty-four in 1887. In Scotland the disease was most rife in the counties of Lanark, Edinburgh, Fife, Forfar, and Perth.

Swine Fever.—There were 7,237 outbreaks of this disease reported in Great Britain during the year, or an increase of 424 as compared with 1886. In England the outbreaks numbered 6,937, an increase of 450; in Wales there were 192, a decrease of forty; and in Scotland 108, or an increase of fourteen over the 1886 returns. The disease was most rife in the West Riding, Lancashire, Northampton, Stafford, Norfolk, Kent, Wilts, Suffolk, and Derby in England; Glamorgan, Denbigh, and Montgomery in Wales; and Edinburgh, Renfrew, and Aberdeen in Scotland.

Anthrax.—Of this disease 235 outbreaks were reported during the year: 213 of these were in England, one in Wales, and twenty-one in Scotland. The English counties in which it prevailed most were Lancashire, Northampton, Lincoln (parts of Holland), Nottingham, Somerset, York (West Riding), and Norfolk; while in Scotland most cases were reported from Aberdeen, Banff, and Edinburgh; and in Wales the single outbreak took place in Pembrokeshire.

Rabies.—There were 496 cases of this disease reported in England during the year, but none in either Wales or Scotland. There were more than half these cases in Surrey, but this was due to a serious outbreak among the deer in Richmond Park. The other counties in which Rabies has been most prevalent were Lancaster, Chester, Stafford, and Hants.

Foot-and-mouth Disease.—Several alleged outbreaks of this disease have been reported during 1887, but a careful inquiry proved that the diseases with which the animals were affected were not Foot-and-mouth, but other affec-

tions which have some of the symptoms which occur in Foot-and-mouth Disease.

Milk Scarlatina.—Up to the end of the year ten different outbreaks of an eruptive disease on the teats of cows were found and investigated. But although in their general clinical appearance, as well as in the microscopic character of the organisms found in them, they agree with the description given of the Hendon Cow Disease, none of them were coincident with Scarlet Fever in the districts in which they occurred. Of these outbreaks five were in Middlesex, one in Lincolnshire, one in Somersetshire, one in Wiltshire, one in Edinburgh, and one in Lanark.

A suggestion by Mr. JOSEPH DRUCE for the appointment of a further provincial veterinary surgeon for Oxfordshire had been considered, and the Committee recommended that Mr. J. P. S. Walker, F.R.C.V.S., of Oxford, be added to the list of provincial veterinary surgeons of the Society.

The Secretary had reported that, in accordance with the resolution of the last meeting of Council, a deputation from this Society and other agricultural societies had waited on Lord John Manners at the Privy Council Office on the 9th December, to urge upon the Government the necessity of adopting uniform and stringent measures, both in this country and in Ireland, to stamp out all existing cases of Pleuro-pneumonia. Professor Brown had informed the Committee that the Agricultural Department had communicated on the subject with the Irish Government, sending a suggested scheme, and that a Draft Order in Council dealing with the matter was now under the consideration of the Irish authorities.

A letter had been received from the Royal Counties Veterinary Medical Association thanking the Council for initiating experiments with regard to Symptomatic Anthrax. The following explanation had been received from Professor Penberthy as to the action of the Home Office with reference to the experiments conducted for the Society by the late Professor Robertson and by himself:—

Professor Robertson held a licence for the specific purpose of being able to comply with the instructions of the Society with regard to experiments on Anthrax and Quarter-ill.

The Royal Veterinary College was also duly licensed as required by law. It was taken for granted that the certificate held by Professor Robertson would suffice for those working in conjunction with or assisting him, and Professor Penberthy acted in this capacity.

On October 6th, 1887, he received from the Home Office a letter drawing attention to an abstract of the report published by the Royal Agricultural Society, "from which it would appear that certain experiments such as could not be performed without a licence from the Secretary of State under the Act 39 and 40 Vic., cap. 77, were performed by you. As no such licence has been granted you, the Home Secretary desires to know if you have any explanation to make in the matter." Professor Penberthy replied asking for a personal interview. This request was refused, and he wrote saying that he was assisting Professor Robertson, who held a licence for the purpose. On November 16th he received a letter from the Home Office stating that "the Home Secretary was satisfied that many, if not all, of the operations performed by you, which have been called in question, were performed contrary to the law, and that you rendered yourself liable to criminal proceedings. Neither the plea that you were acting as Professor Robertson's assistant, nor the plea that the operations were not experiments to which the Act applies, can be entertained. But for the lapse of time which has taken place, the Secretary of State would have directed a prosecution, and you must strictly understand that, in case of any further neglect to conform with the law, you will be immediately prosecuted."

The Examiners on the diseases of animals of the farm other than the horse, having reported that of students from the Royal Veterinary College who obtained the Diploma of the Royal College of Veterinary Surgeons at the examinations held in London, April, July, and Christmas, 1887, the following two passed the best examination: Mr. J. A. W. Dollar, M.R.C.V.S., 56, New Bond Street, W., and Mr. E. R. McHugh, Stokestown, Ireland; the Committee recommended that the Society's silver and bronze medals be awarded to these gentlemen.

Lord EGERTON of TATTON said it was very desirable that the question of the legality of experiments such as those made by Professor Penberthy should be cleared up. As he understood, an experiment which would be likely to preserve a herd from disease could not be carried out in consequence of the state of the law. With a view of testing the value of inoculation, but also with the object of preserving his own herd and those of his neighbours, he had had fifty-six animals inoculated. Since this inoculation none of these animals had suffered from the disease. Four died under the operation, but this was probably owing to the fact that there was not sufficient veterinary assistance at hand. He wished to have the same experiments carried out on his estate again. He had lost two valuable pedigree bulls from the disease, which were not of age to be inoculated when the experiments were made. He should be glad if the Council could take action in the matter by memorialising the Home Office.

In answer to questions, Professor BROWN explained that the real ground on which the Home Office made the charge against Professor Penberthy was that he himself operated, not holding a licence. In reference to the question of experiments on inoculation, these were actual experiments, and it was not certain at the time whether the animals would be protected by them. Professor Robertson's experiments were for the purpose of ascertaining whether the treatment would be successful. He had asked the Home Office, and no doubt the Secretary of State had had the best of advice before replying, whether he himself could perform experiments by the aid of assistants, for the purposes of his investigations into Swine Fever. He (Professor Brown) was told in reply that such experiments could not be performed by an unlicensed assistant. If an operation were performed with the distinct purpose of protecting an animal from disease, such operation would not be affected by the Act; but if it were performed for the purpose of ascertaining whether the treatment was beneficial or not, then such a course was illegal.

Mr. DENT said that it being a purely legal question, he saw no necessity for memorialising the Home Secretary. Lord Egerton might have his herd inoculated, and let the matter be tested in a court of law.

Lord EGERTON replied that what he desired was the sympathy and support of the Council in taking some action in the matter.

Mr. BOWEN-JONES said that farmers would not carry out these experiments for fear of legal proceedings.

Sir T. D. ACLAND said the dictum of the Secretary of State put a stop on all scientific efforts for the protection of our herds, so far as he could understand, and the Home Office appeared also to be very reticent in the matter of granting licences.

The Earl of FEVERSHAM suggested that a memorial should be drawn up setting forth the difficulties which had arisen after the dictum delivered by the Home Secretary.

After further discussion, in which Colonel KINGSCOTE, Mr. BOWEN-JONES, Mr. MARTIN, and Mr. STRATTON took part, it was eventually resolved, on the motion of Mr. JACOB WILSON, seconded by Mr. WAKEFIELD, that the President and Lord Egerton of Tatton, as representing the Society, be requested to seek an interview with the Home Secretary on the subject, in conjunction, if possible, with representatives of the Royal Veterinary College.

Army Veterinary Department.

Gazette, January 31st.

The Queen has been graciously pleased to give directions for the following appointment to the Most Distinguished Order of St. Michael and St. George:—To be an Ordinary Member of the Third Class, or Companion of the said Most Distinguished Order, John Robert Beech, Esq., an officer attached to the Egyptian Army, for services rendered in connection with the recent mission to the King of Abyssinia.

In our last Journal we referred to this well-merited distinction, which has now been officially confirmed. The editor of *The World* for February 8th thus alludes to it:—"The papers announce the appointment of 'Mr. J. R. Beech, an officer of the Army,' to be a Companion of the Order of St. Michael and St. George, in recognition of his services in connection with the recent mission of Mr. Portal to Abyssinia. Mr. Beech, it seems, is an officer of the Army Veterinary Department, who was lent some years ago to the Khedive for employment in the Egyptian Army. This is the first occasion, I should imagine, in which a veterinary surgeon has been employed on a diplomatic mission. Mr. Knox, Chief Accountant of the British Army, expressed the opinion before Lord Randolph Churchill's Committee that there was no body of officers in the Army more able and zealous in their own particular line than those of the Veterinary Staff. Certainly Mr. Beech must be a man of exceptional capacity, and one of whom his department has reason to be proud."

Apropos of the death of Mr. Aitken, recorded in our last, a hunting correspondent ("Triviator") in *The Field* of January 28th says:—"The 16th Lancers have lost in Mr. Aitken, veterinary surgeon, who died last week, not only a first-rate practical authority on horse flesh, but a fine judge of hunters and of their higher development—chasers. Many veterinary surgeons are not sportsmen by habit and instinct, nor is there perhaps any natural sequence between science and sport—between pursuit and pathology; but in not a few departments of the *ars veterinaria* the practical sportsman can give many a useful hint to his clients which may not be found in any compilation. As a tribute of respect to Mr. Aitken's memory, his brother officers gave up hunting till after the funeral."

By command of Her Majesty, a levée will be held at St. James's Palace on March 7th, by His Royal Highness the Prince of Wales. Veterinary officers who desire to be presented on this occasion by the Principal Veterinary Surgeon, are requested to send in their names to him not later than the 4th instant.

First Class Veterinary Surgeon Powell has returned to England from a tour of service in India, and is stationed for duty at Chatham.

Obituary.

Mr. W. J. Hinge, M.R.C.V.S., Hounslow, died on February 6th, at the age of seventy-three years. A local contemporary says of the event:—"The deceased gentleman belonged to an old Hounslow family, and the perseverance and industry which he had always displayed in his profession had gained for him the support and respect of all classes of the community throughout the whole of West Middlesex. Besides his extensive practice, the late Mr. Hinge for many years filled the position of District Inspector under the Contagious Diseases (Animals) Act, the duties of which he discharged with much ability. The deceased leaves a large family, and much sympathy has been aroused in consequence of the sad occurrence, which has deprived the locality of one of its oldest and most respected inhabitants, and many of the establishments in

the High-street have been partially closed during the week as a mark of regard."

Mr. T. Jex, M.R.C.V.S., died on February 15th, in London, aged seventy-seven years. Mr. Jex was retired from the Army many years ago, having served in the Scots Greys and the First Life Guards. Since retirement he engaged in business (not professional) in London, and was, we believe, very successful.

From Woodstock, Canada West, we have tidings of the demise of Mr. W. Irvine, M.R.C.V.S., who studied at Gamgee's School in Edinburgh, and graduated in 1863. The Woodstock (Ontario) newspaper of January 13th remarks:—"In the death of Dr. Irvine, veterinary surgeon, a well-known figure passes away. He was a man of great natural ability, and a most skilful one in his profession. Had his energy and ambition equalled his gifts, he could have attained wealth and position. He was a kindly man, who thought ill of no one. His passing away is like the removal of one of the old landmarks."

The following deaths have been reported by the Secretary of the R.C.V.S.:—

James N. Carter, M.R.C.V.S., Litcham, Norfolk	graduated	1839
S. Hodgson, M.R.C.V.S., Grussouther, Carlisle	,,	1879
J. Darling, M.R.C.V.S., Tarvin, Cheshire ...	,,	1851
H. Davis, M.R.C.V.S., late Blackheath, Kent ...	,,	1873

Parliamentary Intelligence.

House of Commons, February 16th.

RABIES IN DOGS.

Viscount CURZON asked the President of the Local Government Board whether it was the intention of the Government to give effect, by legislation or otherwise, to the recommendations of the Select Committee of the House of Lords on Rabies in dogs; and whether it was in his power to lay upon the table of the House a return showing the number of deaths from Hydrophobia during the last ten years.

Mr. RITCHIE: The subject of Rabies in dogs is receiving the attention of Her Majesty's Government, and the Privy Council Office are in communication with some local authorities with reference to the restrictions which may be necessary in connexion with it. If it should be considered that further powers are required they will be asked for. If my noble friend moves for a return of the number of deaths from Hydrophobia in England and Wales from 1877 to 1886 the motion will be agreed to by the Government. The average annual number of deaths in England and Wales during the ten years referred to was 40, and the average number in London from 1878 to 1887 was seven. The total number of deaths in England and Wales from Hydrophobia in 1885 was 60, of which 27 were in London; in 1886 it was 26, of which nine were in London. The number of deaths in London in 1887 was two. I am unable to supply the total number in England and Wales for 1887.

Jurisprudence.

HYDROCELE, OR SCROTAL HERNIA.

AT the Chester Country Court, on Dec. 9th, before Judge Horatio Lloyd, Mr. E. H. Lloyd, barrister (instructed by Mr. J. Tatlock), was for the plaintiff, and Mr. Cartwright for the defendant in an action brought by C. R. Topham, Darland Hall, near Wrexham, against James Storrar, jun., veterinary surgeon, Chester, for £35 14s. 6d. damages for breach of warranty on the sale of

horses. On the 7th May last, Mr. Lloyd said, Mrs. Topham went to Mr. Storrar's stables to see a pair of carriage horses which she had heard were for sale. She was accompanied by a friend (Miss Easterby) and her coachman. In inspecting the horses Mrs. Topham asked if they were sound, and defendant replied, "Oh, yes, they are sound; at least I am a veterinary surgeon, and I consider them so." She observed a blemish on the eye of one of the horses, but defendant said that had just been done by a flick of the whip and would be all right in a day or two. Mrs. Topham, expressing a desire to have the opinion of Mr. Edwards, veterinary surgeon, defendant said there was no use of that as he was a veterinary surgeon himself. Eventually, however, the animals were taken to Mr. Edwards, who examined them and at once said that one of the horses was as nearly as possible blind in the right eye. Notwithstanding this, however, she had at that time some degree of confidence in Mr. Storrar, and would not believe in the blindness, thinking, as defendant had said, that it was only a flick of the whip. When the horses were afterwards galloped in Souter's-lane defendant told them not to gallop them too much. He at the same time said the horses would go in single or double harness and were perfectly quiet to drive. A bargain being struck £110 was agreed on as the price of the pair, but defendant consented to take another horse worth £30 from plantiff, so that the actual price paid was £80. The horse with the blemished eye did not recover so rapidly as the defendant had predicted, in fact it got worse instead of better, and was soon totally blind in one eye. The result was that in double harness it shied at everything, and in single harness it would scarcely go at all. In July something else was discovered to be wrong with the horse, and Mr. Edwards pronounced it scrotal hernia, an affection which could not have come into existence between May and July. This defect did not appear till after the horse had been severely exercised, and as the suggestion was made by defendant during the exercise in Souter's-lane not to gallop it too much that probably supplied the answer to the question why Mr. Edwards was unable to discover the hernia at the time of the sale. On the 10th August Mr. Tatlock, acting for Mr. Topham, wrote defendant requiring him to take back the horse complained of and repay the amount, else he would sell it and take proceedings against defendant. The reply was a letter from Mr. Cartwright offering to accept service on Mr. Storrar's behalf. The horse was accordingly sold by Mr. Cunnah for £22 1s., the auctioneer's commission being £1 14s. 6d., leaving £20 6s. 6d. Plaintiff therefore claimed for the one unsound horse £55, and £1 1s. for livery at the Grosvenor Hotel, less £20 6s. 6d. realised by the sale, or a total of £35 14s. 6d.

Mrs. Topham gave evidence supporting the opening statement, and in cross-examination admitted having tried to sell the pair of horses to Mr. Pell, of the Queen Hotel Stables, for £100 or £120. She also admitted getting herself and her groom photographed standing at the heads of the horses.

Mary Elizabeth Easterby and the groom were called, and R. C. Edwards and Wm. Knight Lewis, veterinary surgeon, Tarporley, deposed to examining the horse and finding it affected with scrotal hernia.

Mr. Cartwright for the defence denied the warranty entirely. In fact from the statement of Mrs. Topham herself it appeared that all she asked was about the condition of the eye. The word "sound" was observed upon, but never was made part and parcel of the contract; there never was between the two parties any stipulation that the horses were purchased on the distinct bargain that they were to be sound. So far from Mrs. Topham's relying upon defendant's statements, she at once went to her own veterinary surgeon to get them examined. If she was relying upon Mr. Storrar's guarantee that very circumstance alone surely displaced any confidence in her mind as to defendant's warranty. The fact was Mr. Edwards put them through a

thorough examination, and it was a perfectly open contract without any warranty on defendant's part. Besides, a full opportunity was given between the 7th and the 14th Oct., during which time Mrs. Topham was in possession of the horses, to discover any flaw.

The defendant, James Storrar, jun., in his examination, said Mrs. Topham asked, "Did you get any veterinary surgeon to examine the horses for you?" and witness replied, "No, being a veterinary surgeon myself." To this the lady rejoined, "What I mean is, will you have any objection to my veterinary surgeon's examining them?" Witness answered that he bought them only the previous week, and the groom told him one of the animals had had a flick in the eye with the whip. Mrs. Topham, after the examination of the horses, said, "Edwards has passed the horses. One has a mark in the eye, the other a slight corn, but I will take them for £110 if you will give me £30 for my chestnut mare." Witness was never asked a question about soundness and quietness in single and double harness. Witness advised her to see them in harness, but turning to her groom she said, "Williams, you have seen them in harness?" The groom replied in the affirmative, and the lady said, "That will do." Sometime afterwards Mrs. Topham meeting him, asked if he knew of anybody who had a pair of heavier horses, as that pair were all very well, but not big enough to run the brougham singly, especially in winter. Prior to that witness had driven the horses single and double, and they went very well indeed. He bought the horse complained of at Mr. Cunnah's sale, and had driven it ever since. The injury to the eye was merely external, caused by a blow he believed, and the animal was only partially blind in that eye. It was not true that it suffered from scrotal hernia, what was wrong being hydrocele, caused by a defect in castration, but it did not interfere with the working of the horse. It was not witness's custom to warrant horses, and he was not a horse dealer.

Mr. Lloyd: Did you not warrant a horse to Mr. Brassey that nearly killed him? (Laughter.)—Witness denied this, and also that he warranted another to a Mr. Davies and had to take it back. It was untrue that Colonel Hamersley recently asked witness to examine a black horse for him, that he said he could not pass it as sound, and that he (witness) bought it directly afterwards and sold it to Mr. B. C. Roberts as a sound horse. He told Colonel Hamersley the animal was perfectly sound except a cough, and that it was not fit to gallop. Upon that Colonel Hamersley said he wanted it for an Oxford friend, and so would not take it. In the evening Mr. Roberts asked him about the same horse, and he passed it with the exception of wind. Mr. Roberts risked that, and the horse was afterwards six weeks in hospital with the cough. He denied selling to Messrs. Parker and Clegg a broken-winded horse. Neither his father nor himself was a horse dealer, but he bought an odd horse now and again. Anybody would do that, and if Mr. Lloyd bought a horse he would sell it.

Mr. Lloyd: If I bought a horse from you I would sell it. (Laughter.)

Witness, in further cross-examination, admitted the horse in question had broken Dr. King's trap shafts, but it had been driven some time in it before that occurred. Witness bought it at Mr. Cunnah's sale for £22, but he considered it worth £55 as matching a pair. He knew it had hydrocele when he parted with it to Mrs. Topham, but he did not mention it because she wanted to have her own veterinary surgeon's opinion.

Re-examined: Mr. Herbert Brassey bought a horse from him in 1884, galloped and jumped with it and went away perfectly satisfied, saying, "It will do for me, and I don't care whether it does for my brother or not." (Laughter.) That horse was spoiled by bad riding, and now they blamed him for it. Mr. Ernest Brassey was an amateur in those days, and spoiled the horse. (Laughter.) Both Colonel Hamersley and the other gentleman

named as having transactions with him were perfectly satisfied and were still clients of his.

Edward Foy, groom to defendant, deposed to seeing Mr. Edwards examining the horse, and hearing Mrs. Topham say, when told it was blind in one eye, Mr. Storrar told her about that, and how it was caused, and it would be all right in a few days.

Neil Barron, V.S., Sutton, denied, after an examination of the horse, that it had scrotal hernia, and said it was hydrocele (which did not interfere with its usefulness). The mark on the eye had been caused by external injury, and there was no disease.

Cross-examined: Hernia was a very serious unsoundness, and hydrocele only a slight unsoundness.

James Storrar, senior, also denied the presence of scrotal hernia, and affirmed it was hydrocele. He himself had driven the horse in single harness without difficulty. Hydrocele was not unsoundness. Before leaving the box the witness protested against the way in which the case had been put for the plaintiff, and the amount of scandal allowed to be retailed.

His Honour said Mr. Storrar should leave that to him. There had been nothing imported into the case beyond what was necessary. No doubt it might be exceedingly disagreeable, but with such a tremendous conflict of evidence it was absolutely necessary.

Thomas J. Dutton, The Beeches, Saltney, who gave his evidence under protest, had seen the horse in question driven quietly by Mr. Storrar and Dr. King.

Cross-examined: Witness bought it at Mr. Cunnah's sale for Mr. Storrar.

In giving judgment, his Honour said the case certainly exhibited some of the usual characteristics of all cases of the kind, including an almost hopeless conflict of testimony. The plaintiff complained of three distinct breeches of warranty, and in substance the defendant's case was that there was no such warranty as to any of those subjects; and secondly, that if there was, the plaintiff did not rely upon them in any way. First of all it was alleged by the plaintiff that there was a warranty with reference to the horse's eyesight. Undoubtedly at the time of the sale the horse was suffering from an apparent injury to the eye, which was noticed and spoken about by both parties. Mrs. Topham had the horse examined by Mr. Edwards, of Newgate-street, her own veterinary surgeon, who told her that the injury was not the result of an accident, but was in the nature of permanent blindness, and would probably go worse. There was no evidence which would justify him in coming to the conclusion that Mrs. Topham relied upon the statement of Mr. Storrar with reference to the injury to the eye (viz., that it was merely caused by the flick of the whip) at all. Therefore he would dismiss that part of the case altogether. The second branch of the case was with reference to the alleged warranty that the horse (one of the pair sold at the time) was quiet in single and double harness. It was said that it was not until the horse had been three months sold that it was found on trial that it did not go well in single harness, but he could not accept that excuse, because Mrs. Topham was not unaccustomed to horses, and it was in consequence of what her experienced groom saw of the horses in question that she went to negotiate for their purchase. He preferred to believe that the reason why the horse shied was that the eye was becoming worse; therefore the trial of the horse in single harness was hardly a fair one. Even if there had been a warranty there was no evidence of any breach of it; and he doubted very much whether there was any real warranty that the horse was quiet in harness. Now he came to what was a more serious matter. The plaintiff alleged as the third ground of complaint of breach of warranty that the horse in question was suffering from scrotal hernia. Of course there could be no question that that was a serious

unsoundness, but its existence in the horse even now was denied by the defendant, for whom it was said that the complaint from which the horse was suffering was hydrocele. That the horse was suffering from one or the other was certain, and the difficult question to decide here was, whether there was warranty of soundness in this respect. Mrs. Topham, her friend (Miss Easterby), her groom, and Mr. Storrar, were the only persons present at the time of the giving of the alleged warranty. Mrs. Topham, Miss Easterby, and the groom, all swore that there was a distinct warranty given that the horse was perfectly sound; on the other hand, Mr. Storrar swore that not a word was said about the soundness. It was obvious that if he came to the conclusion that nothing was said about soundness, and that no warranty was given, he must convict Mrs. Topham, Miss Easterby, and the groom, of something that he could not hesitate to regard as anything else but perjury. He need not go that length, or anything like it. It was very possible—seeing that Mr. Storrar had many transactions of this kind, and seeing the desire there would be to avoid giving warranty—it was possible that he might have said something which amounted to a warranty, and which might have since escaped Mr. Storrar's recollection. He (the judge) could come to no other conclusion than that there was a warranty as to the soundness of the animal. Had there been a breach of it? The plaintiff said the horse was suffering from scrotal hernia, and veterinary surgeons were called to support that view. On the other hand, Mr. Storrar, his father, and a veterinary surgeon named Mr. Neil Barron, said that the horse was not suffering from scrotal hernia, but was suffering from hydrocele. But Mr. Barron, the witness of the defendant, admitted that even hydrocele was an unsoundness. Therefore he (the judge) found that there was a warranty of soundness and a breach of it. As to damages the plaintiffs had proceeded on the assumption that the horse was worth half the price (£110) of the pair, or £55, but it must be remembered that the horse in question had an injury to the eye, and he would knock off that estimate of the value £12 10s. Deducting this sum from £35 14s., the amount claimed, there was left a balance of £23 4s.; and he would give judgment for plaintiff for that amount. As to the question of costs, he had considered that two out of three grounds of complaint by Mrs. Topham had fallen through, and that for three months Mrs. Topham never uttered a syllable of complaint against the horse, but endeavoured on different occasions to dispose of both at a price higher than she had actually paid for them. Under all the circumstances he would give judgment for plaintiff for £23 4s. without any costs at all.

Notes and News.

INFLUENCE OF SLEEP ON THE QUANTITY OF CARBONIC ACID EXHALED.—M. de Saint-Martin, in a paper communicated to the Paris Academy of Sciences, shows that natural sleep reduces the quantity of carbonic acid gas exhaled by about one-fifth, but lowers the quantity of oxygen absorbed only by one-tenth. In sleep occasioned by morphine, the proportion of carbonic acid given off sinks to one-half, and during the sleep induced by chloral or chloroform to one-third of its normal value. During the state of insensibility occasioned by the latter agent, if sufficiently prolonged the blood becomes poor in oxygen and is loaded with carbonic acid.

SLAUGHTERING BY ELECTRICITY.—Some experiments have been recently made in St. Petersburg with the idea of slaughtering cattle by electricity, the results of which have been highly satisfactory—death being in all cases instantaneous.

NAPTHOL AS AN ANTISEPTIC.—Dr. Bouchard, writing in the *Comptes Rendus*, recommends napthol as a powerful and relatively safe antiseptic, especially for internal use.

HORSES IN NEW YORK.—The value of the horses in New York City is said to be £2,400,000. There are 60,000 work horses. The greatest demand is for the draught animal; the smallest per cent. being trotters driven for pleasure. The life of a horse in New York is about four years, so that the city buys 25,000 horses each year. The two classes of horses that sell the best are heavy express horses and coachers or roadsters.

VARIOLA AND VACCINIA.—"At Besherri (in the Lebanon) I tried vaccination, but I found that the inhabitants were not affected by the operation, the vaccine matter producing no pustules, and I was told that none of them caught the Small-pox, because their cows have sometimes the Cow-pox, the origin of which is caused by the change of climate. The inhabitants of the higher regions pass the winter, together with their cattle, in the plains of Sgorta, not far from Tripoli. Hence I infer that the inhabitants of Besherri, through being in continual contact with their cattle, as cows, etc., become infected with the disease, and are thus preserved from human contagion."—"Horniberger. Thirty-five Years in the East," p. 13.

AN AGED HORSE.—The *Militaar Zeitung*, of Berlin, records the following exceptional instance of longevity in the horse, which otherwise appears to be well authenticated. After the long war with France at the commencement of the century, the Hanoverian cavalry were left in possession of a certain number of fine English horses, one of which had been drafted as far back as 1793 into the 3rd Hanoverian Dragoon Regiment, which was afterwards attached to the British forces in the Peninsular. The animal in question shared in the campaigns of Spain and Portugal for seven years, and went through the crowning conflict at Waterloo. In 1816 the horse was transferred into the Hussar Guard corps, where it served until 1847. It always remained in good health and perfect condition, and the Hanoverian Government, in the latter year, to recognise its hitherto unparalleled service as a war-horse, ordered it into quiet retirement with every care and attention, until its death in 1850, at the full age of sixty years. It had come scatheless through every fray at which it had been present, and at the action of Gracien-Hernandez (Spain) the animal was the selected remount of Colonel von Arentschild. The officers of the regiment in which the horse had last done duty commemorated its services on a tablet affixed to the wall of the orderly office at Werder, but which disappeared during the forcible incorporation of Hanover with the federation of the German States in 1866.

A HORSE IN SPECTACLES.—A correspondent of the *Manchester Sporting Chronicle*, thinking that his horse was short-sighted, had his eyes examined by an oculist, who certified that the horse had a No. 7 eye and required concave glasses. These were obtained and fitted on to the horse's head. At first the horse was a little surprised, but rapidly showed signs of the keenest pleasure, and he now stands all the morning looking over the half-door of his stable with his spectacles on, gazing around him with an air of sedate enjoyment. When driven his manner is altogether changed from his former timidity; but if pastured without his spectacles on, he hangs about the gate whinnying in a plaintive minor key. If the spectacles are replaced he kicks up his heels and scampers up and down the pasture with delight.

PREVENTION OF HYDROPHOBIA.—Recently, at the Privy Council offices, Viscount Cranbrook, who was accompanied by Lord John Manners, received a deputation consisting principally of members of Parliament, representing divisions of Lancashire, whose object was to ask that the same regulations

with regard to the muzzling of dogs should be enforced in boroughs as existed in other parts of the country. Sir Ughtred K. Shuttleworth, M.P., introduced the deputation, which included Colonel Sandys, M.P., Mr. Robert Leake, M.P., Colonel H. B. H. Blundell, M.P., and others. Sir M. W. Ridley, M.P., was prevented from accompanying the deputation owing to his attendance at the Royal Commission upon Civil Establishments. Sir Ughtred K. Shuttleworth, in introducing the deputation, said that the regulations enforced by the county authorities were not adopted by the borough authorities, and consequently the efforts of the county authorities were defeated. Other speakers advocated that an order should emanate which would apply to the whole of England. Colonel Moorson, the chief constable of Lancashire, cited statistics showing decrease in the disease as the result of muzzling regulations being enforced. Viscount Cranbrook, in reply, said that the subject was not so easy to deal with as some persons imagined. The House of Lords Committee on the subject last year found that there would be some 300,000 dogs exempted from registration, but he thought it quite possible that it might be well to give extended powers for the destruction of stray dogs. He thought that Lord Mount Temple had a Bill before the House of Lords, or was about to introduce a Bill, which might make it unnecessary for the Government to introduce one of the kind. No doubt such regulations as had been enforced had done a great deal of good. In London the disease had been reduced materially, the number of cases had been brought down to units where it had been tens. He could not hold out any hope that the Privy Council would take the responsibility of making a law for the whole country, but, perhaps, the deputation would be satisfied with the assurance that the subject was very strongly before him, and that he was very anxious to assist in getting rid of the disease.

Rewards to Veterinary Surgeons.—Among the rewards bestowed by the French Academy of Sciences at the annual meeting in December last, three of our colleagues were so honoured. The interest of the Breant Prize (3,000 francs) has been awarded to Professor Galtier, of the Lyons Veterinary School, for his work on Rabies. A Montyon Prize (2,500 francs) was allotted to Professor Nocard, Director of the Alfort Veterinary School, and Veterinary Surgeon Mollereau, of Charenton, for their paper on a Contagious Mammitis of Milch Cows, which already appeared in this journal.

Correspondence.

PURPURA HÆMORRHAGICA, OR ACUTE RHEUMATISM.

Sir,—Mr. Mahon gives what I consider a very good summary of researches on the pathology of Purpura Hæmorrhagica in the horse, in the Veterinary Journal of December last. I am very much obliged to him for his allusion to a paper by me on the subject, which appeared in your Journal some time ago. He has, however, given me credit for one statement which I actually did not make. He says I saw *one* case of this disease following on Rheumatism. As a matter of fact, in the paper to which Mr. Mahon very kindly alludes, I have described at least three cases seen in this station, and others treated at Saugor. Since my article was written I have come across yet others in my own battery, stationed in Jubbulpore, in all of which symptoms of Purpura were *associated with*, or followed, an attack of acute Rheumatism. How are these cases to be explained? Not as coincidences, I think; for, besides their clinical history to guide us, a knowledge of the organisms present in this disease shows me they are exactly similar to those noted in acute Rheumatism of man. I find principally three kinds of

organisms associated with Purpura in the horse, namely, separate cocci, diplococci, and slender rods. These, in the main, agree in their appearance with similar organisms found associated with cases of acute Rheumatism in man. I, therefore, suggest acute Rheumatism being substituted for Purpura Hæmorrhagica in the horse. Though there is still much difference of opinion regarding the pathology of this affection in the horse, I believe that Purpura Hæmorrhagica is only a manifestation of Rheumatism, and which, I believe, a careful inquiry into its pathology will demonstrate. I would further add that, in cover-glass preparations of blood and serum which I had allowed to stand over for several days, and then examined, I noticed, in addition, the cocci to assume zooglæa masses, and the bacilli or rods appeared in colonies. The organisms stain most readily with methyl-violet.

Moreover, Purpura Hæmorrhagica in man often follows in the wake of acute Rheumatism. The mistake so often made is to suppose that Rheumatism is necessarily accompanied by lameness in animals, or, in other words, that it always implicates the joints; whereas we are familiar with more than one form of Rheumatism in the horse, the same as in that disease seen in man, which require a different explanation.

Jubbulpore, *January 1st*, 1888. R. W. BURKE, A.V.D.

A LINE ON "PHARMACY AND THERAPEUTICS."

SIR,—In a recent issue of one of the journals—in yours was it not, sir?—Mr. Burke, A.V.D., lavishly lauding the style and matter of the writer of above, says it is supposed these articles are from the pens of Messrs. Gresswell.

I have honoured myself by reading some of the earlier of these editorials, and though I "have not music" they savoured highly of the style of a Mr. Allman, appropriately referred to by Mr. Leeney, of Brighton, in yours quite recently. Sometimes, we know we are "at fault" in diagnosis, but your readers may rest assured that this is not the case in my fixing the authorship of the "Pharmacy and Therapeutics" of the *Veterinarian*. I beg to be allowed to express my wonder that the pronouncedly discerning powers of Mr. Burke could mistake the grammar, style, and substance of "Pharmacy and Therapeutics" for the careful periods of a literary and scientific gem of the Messrs. Gresswell.

My first and present impressions of these papers, Mr. Editor, suggested the effort of some one with a druggist's (officinal) knowledge of the application of drugs, rather than the production of an educated man possessing an acquaintance with animals, or a subtle and discriminating experience of diseases. How are we to understand the position of an independent technical and scientific journal like the *Veterinarian* yielding up its leaders to a drug-seller to pose as an authority on Therapeutics, pharmaceutical preparations and pharmacists? Has the time arrived when journals are run for the benefit of, and at the dictation of, publishers in the former place of editors?

Undoubtedly journalistic matter of real interest to the profession is scarce, but the eccentricities of these technical leaders of the *Veterinarian* are as inexcusable as is Mr. Burke's admiration of their style, his misinterpretation of their *raison d'être*, and his ascription of their authorship to veterinarians of more than ordinary repute. Errors in grammar and originalities of style are thankfully tolerated in these times of worrying wear and tear; not so technical ambiguities or instances of editorial partiality and of weak-kneed scientific description; much less ought these to be pointed out as models of veterinary writing. Mr. Burke must be very busy, indeed—if not worse than busy—to hold up these "papers" as models of, etc., etc. They really are no better and no worse than the puffs that any druggist—of the facile temperament—must be able to produce by the vulgar acre ere, as an ordinary druggist or seller of

special pharmaceutical productions, he can hope to attract the attention and the custom of the British or other public to the curative virtues of his "celebrated cough cordial," or his "dandelion liver-lifting confection." Text-books by the score supply the diction and phraseology of articles like "Pharmacy and Therapeutics," but not the taste and talent for the unprincipled and unacknowledged application that has escaped the notice and trustfulness of the editors of the *Veterinarian*. At the moment of writing, I can lay hands on but two numbers of this periodical containing these articles. Each contains expressions which cannot have been written by an educated man, and they contain recommendations to use certain drugs in a manner that could not be prescribed by thinking veterinarians. The voice may be to Mr. Burke the voice of Esau; my sometimes careless and always very hasty glance at the "Pharmacy and Therapeutics" of the *Veterinarian* proves to me that that journal lends itself to Allman, and that Allman (editorially) puffs the drugs of Allman.

How has Mr. Burke misinterpreted the transparency? Mr. Burke's complaint of the style of contributors to veterinary journalism may be just or it may be uncharitable. Busy men write little and sometimes that little hurriedly. *Tu quoque.* Mr. B.'s supposition that the "Pharmacy and Therapeutics" of the *Veterinarian* is the performance of scientific veterinarians is not brilliant; his imagination that these "papers" are worthy of imitation reminds us that we are all obtuse at times.

Professional men and specialists, whether busy or not, Mr. Burke ought to know are under no obligation to display themselves as literary characters in their contributions to journals or under other circumstances whatever. This world—professional or lay—ought to be, and in fact is, too thankful to hear from them facts, on any terms, to attempt to snobbishly dictate "style" or commas.

The dignified dulness of mediocrity and the stereotyped phraseology of the writer of "Pharmacy and Therapeutics" may please the smugness of a superficial few in the profession, who, like Mr. Burke, don't know, or who forget that text-books—even the dullest and most incomplete—on "Materia Medica" have used the same terms (though in an honest way, before and ever since the ancient days of Anthony Todd Thompson) that are now being hashed up in the *Veterinarian*, in a manner so insidious as to lead us to imagine that the sleeping editors recommend the daily use of bushels of new, and very new drugs, and of gallons of Allman's mixtures as *necessary* in the medical management of animals, which at present represent cash—a commodity as sacred in these days of sham and æstheticism as were cash and cows in Catulline times. *Auri sacra fames!*

JOHN CAMMACK, M.R.C.V.S.

Kimberley, South Africa, *December* 10*th*, 1887.

UNPROFESSIONAL ADVERTISING.

Autolycus: Here's another ballad. Of a fish that appeared upon the coast on Wednesday, the four score of April. forty thousand fathoms above water. . . . The ballad is very pitiful and as true.

Dorcas: Is it true too, think you?

Autolycus: Five justices' hands at it; and witnesses more than my pack will hold. —*Winter's Tale.*

To the Editor of the VETERINARY JOURNAL.

SIR,—It is a compliment indeed to veterinary surgeons in the aggregate, that the profession is respected notwithstanding the determined efforts of the Autolyci to stain its roll-sheet in the gutter. I beg to enclose you the cause of my present wrath, and whilst doing so I cannot refrain from personally commenting on the ghastly production. The enclosed is only one of a series of professional, or rather unprofessional, degradations; some less

bad, some worse; scandals not confined to a village or to a town, but circulating widely, as the perpetrators ensure they shall. Is it wonderful, then, that one should be harping a perpetual apology for the sins of one's brethren? Is it strange that the public, forgetting the bright and recognised aspect of the profession, should sink the "vet" or the "vitinary" in the grovelling "empiric"?

Here is the case of a man having the same qualifications as his co-practitioners, deluding the simple and shocking the wise by his bogus titles and impossible nostrums. And not content with this, in the magnanimity of his soul (I question whether he has one), he must needs propose to dispense veterinary advice gratis!

In the list of his marvellous specifics—and they are many—one struck me as peculiarly funny: he boldly advertises pills for the cure of Hydrophobia! And yet poor Pasteur goes on racking his brains about a bacillus. What's the good of a bacillus if one has these wonderful pills? Again, the incongruous admixture of science and slang, and the sublime confidence in the acquaintance of the public with both. The following are a few quotations: "Mixture Laringitis" (under the head of ointments); "Powders to reduce any Emphisematous Swellings;" "Medicine for Hoose," and "Gripe No. 2, Purging Horses" (literal); "Powders for Yellows," and ditto "to prevent Splenic Apoplexy;" "Cud (?) for cattle;" "Oileates to make stiff joints pliable" (10s. per lb.—extra presumably for the spelling); "Draughts—Stimulating for cases of Chills and Shakes;" "Cure-all;" "Loss of Hair and Itch Oil;" "Powders to act on Optic Nerves, useful in affections of the eye;" "Lotions for wounds and eyes" (?); and so on to the end of four columns.

His pills "for the cure of Fatty Tumours" are a specialité, likewise the draughts "to give wind and staying power to greyhounds when running."

Medicine chests are also on the list, and he sports an "elexir." Finally, he winds up by illustrating his gaudy Price List by portraying, in bliss and contentedness, certain obese cattle and a frolicsome horse, all presumably the grateful recipients of his all-healing drugs.

In conclusion, I must apologise for having ventured to take up so much of your valuable time, but

> "I speak as my understanding instructs me,
> And as my honesty puts it to utterance."

To your mature judgment I commit the Price List.

FITZ. EASSIE, M.R.C.V.S.

[We are decidedly of opinion that the advertisement sheet issued by Mr. Peter Ellis, of Leeds, is in every way unworthy of a member of the Royal College of Veterinary Surgeons—and is, indeed, very discreditable to the profession. It should be laid before the Council of the Royal College, as that body now has power to prevent such disgrace being inflicted upon us by those who appear to have no consideration for their own or their colleagues' position as professional men.—Ed. V. J.]

"OSSIDINE" AND "OSSOLINE."

SIR,—Those preparations which have lately acquired a transient importance, due principally to their extensive and elaborate advertisement, as certain cures for all diseases of horses' legs, feet, and lameness, generally including (*mirabile dictu!*) side-bones require, I think, at the hands of one of our profession some notice and examination. And this for many reasons, which I will define.

Firstly, because they have been recommended to the members of our

College, as something entirely new and original; secondly, because it frequently happens that a practitioner, in his daily avocations, may be asked by a client who has read a glowing description of their value what his opinion of them is, to what they owe their supposed power, and if they really possess some hitherto unknown efficacy; and again, lastly, and specially, because some members of our craft have unfortunately and, I feel sure at the same time inadvertently, given testimonials as to their value and effect, and admitted thereby that, in their opinion, they regard them as agents hitherto unknown to the profession at large.

This last reason I view as serious, and in a manner degrading, because, naturally, a member of a scientific and enlightened profession should be very chary of giving an offhand opinion of a secret remedy before applying the chemical knowledge he is presumed to possess to ascertain whether the preparation in question contains any previously unknown agent that has been applied to the reduction of exostoses.

Being myself, therefore, somewhat sceptical as to the marvellous action which these remedies claim to possess; and at the same time being wishful, if possible, to elucidate the mystery for our benefit at large, I obtained a supply of each, and submitted them to a careful examination, with the following results.

I found "Ossidine" to be a solution of corrosive sublimate (bichloride of mercury) in spirit of wine, in the proportion of about 1 in 66 of the whole mixture, which had oil of amber and oil of thyme and camphor added to it —by the way, neither a chemical nor mechanical mixture. And "Ossoline" was discovered to be simply a spirituous solution of the same chemical, *e.g.*, bichloride of mercury. I need not say this remedy is "as old as the hills."

But, sir, the moral I would venture to deduce from the foregoing, and what principally led me to address you, is this, that our members should uphold the profession as a scientific and enlightened one, and never demean themselves by advocating mere quackery. We should be very careful and circumspect before giving the weight of our names, as members of the R.C.V.S., to laud the virtues of nostrums which we have not primarily taken the trouble to chemically examine. For, sir, such a practice can never redound to the credit of ourselves in particular, nor to our profession at large.

"FORTIOR."

TRAUMATIC EMPHYSEMA IN DOG.

SIR,—On January 14th we had the dead body of a dog brought to us for examination as to the cause of death. The animal was the property of the Marquis of Abergavenny, and was a deerhound bitch which had been hunting in the afternoon, and after running a buck it was noticed that the size of her body was much increased. There was also a difficulty in breathing, and attempts to vomit. This condition became more acute, and death resulted in about twenty minutes after the first noticeable symptoms. It was an hour after death that we made the examination, and the body was then of an enormous size, and the loose cellular tissue under the tongue was much inflated and protruding from the mouth in the form of a bladder, the tongue itself being its normal size; this swelling pressed the tongue to the roof of the mouth, causing death by Asphyxia. From the above facts it will be seen that the dog died from Traumatic Emphysema, caused by a wound from the buck's horn, and in running the animal literally pumped itself full of air. Believing this case to be an almost unique one, I trust it may prove of interest to some of the numerous readers of your Journal.—JOHN S. GOULD,

Pupil to E. A. Hollingham, M.R.C.V.S.

Tunbridge Wells, Feb. 14th.

DOES A VETERINARY PRACTICE IN A COUNTRY TOWN PAY FOR WORKING?

DEAR SIR,—When our profession is rapidly increasing in members, and our colleges are year by year more and more crammed with students, the above question becomes one of grave and anxious consideration for parents and guardians. Not alone in a monetary point of view, but also as regards the maintenance of that social position to which the profession rightly belongs, and for which you have laboured so long and earnestly, and with some success. Moreover, I believe the veterinary surgeon as he is to-day, educated, and viewing him in the light with which the public have gradually come to regard him, may occupy a fair social standing if he can command money enough to support that standing. For, given a certain amount of respectability, breeding, education, and manners, it is what money will command which must and will do the rest for him. I do not mean being purse-proud, money-ostentatious, lavish in expenditure, or having a large balance at the bankers; but the judicious outlay of such a sum as will cause him at all times to be looked on as a gentleman.

To occupy a good social standing in a country town (if a man is married) it is necessary he should reside in a substantial house, with servants, if not of high class, at least of respectable appearance, capable of doing the work well, and in numbers suited to the size of the house. The furniture and surroundings (in which I will include gardens, horses, and carriages) must also be of that character which will call forth respect, if not admiration; for it must be remembered that my remarks apply to those of us who have to make and keep a position, and not to those born in it, and consequently much easier to maintain. Will the income of a veterinary surgeon relying solely on legitimate practice in a provincial town of even eight or ten thousand inhabitants do this for him? Our practices, pecuniarily, are too often regarded by the public in the same light as that of the sister profession, and it is a common remark that there is a fine opening for a veterinary surgeon here, there, and almost everywhere; for you are told there is only one veterinary surgeon to ever so many doctors. But this is quite a misleading view of the matter, as in a town of the size above-mentioned there will probably be five or six doctors, or about one medical man to fifteen hundred inhabitants; but what about the horses in the town? These will perhaps number two hundred or two hundred and fifty, with a sprinkling of cattle and sheep. This latter class of work—of attending cattle and sheep—is not lucrative; beyond which there is almost certain to be a quack or two to take the bulk of it from you. In the villages also surrounding the town the same state of things prevails, the human population far outstripping that portion of the lower animals which we are usually called on to attend. The consequences are that a good doctor has his surgery full of clients every morning, and when he starts on his round he books nine or ten visits before he returns; and altogether during the day he will probably prescribe for twenty or more patients. The veterinary surgeon's work in the country, on the contrary, is much scattered. He, however, goes far longer distances than the surgeon, but comparatively, owing to the paucity of sick animals, will often go several miles out to his patient and back again without seeing another; or at the most he will only visit two or three on the same round, and if during the day he prescribes for seven or eight he will be doing very well for a country practitioner. Now a veterinary surgeon's charges are no higher than a doctor's, and although he travels far more miles, and in one way and another is always a busy man, yet he does not get more than half the number of fees, and his income is consequently very much smaller. From a perusal of advertisements of practices for sale, and from observation, I conclude that the country

practitioner, as a general rule (I admit there may be exceptions) receives from three to four hundred pounds a year. He books more, no doubt; but these sums are near the mark of what actually comes to hand. With this sum of money he will have to provide and keep two horses, a carriage, and a man to look after them; also other expenses incidental to travelling, and a heavy drug bill. After these items are settled and paid for, how can he keep his domestic arrangements up to the mark, subscribe to the local charities, hounds and pastimes, and conduct himself generally in such a manner as will place him above the level of dentists, architects, a good auctioneer, or a farmer?

And then, again, looking at it from a matrimonial point of view. If you, sir, or the solicitor of the VETERINARY JOURNAL consider this part of my communication libellous, I hope you will kindly exercise your right of censorship and leave it out. The ladies generally are sharp in looking out a position for themselves; it is rarely they so far forget as to marry beneath them, at least, not nearly so often as men. Therefore, we are obliged to content ourselves by picking up a well-dressed, respectable, clever, bright lady, even though we should find her at the bar of a hotel. Perfectly honourable, I gladly confess; but, at the same time, not calculated to elevate one in the social sphere.

The competition in country places is also so great, the struggle for professional existence so hard, and it takes such a large number of clients to keep one going, that the country veterinary surgeon of necessity is compelled, no matter how irksome or repugnant it may be to him, to attend cattle markets, horse sales, and shows, and it may be race meetings. He must do this in order to increase and keep his connection. If he has nothing else to rely on but purely professional work, he must get clients and money, if it is but little, somehow; and this is why we see the practitioner making friends with an inferior class of people. He does so to get their work; and he goes in for low fees to cut out his neighbour. Only a short time since a veterinary surgeon offered to do the whole work on one of the largest and best farms in this half of the country for four pounds a year. Another gentleman in the same town immediately offered to do it for three, notwithstanding the fact of the farm, lying a distance of nearly four miles from him. It is this begging of custom as it were, which brings out those remarkable advertisements which you are kind enough to expose in your journal sometimes, and glaring labels on bottles and notepaper. It also gives rise to biassed opinions on the part of one practitioner against the opinion of another. To gain and save money, it is a necessity; he is bound to do it; there is no help for it that I know of. We see veterinary surgeons travelling in third-class railway carriages; they take pupils and assistants into the house as members of the family, a custom relinquished by the best tradesmen. They engage in posting, horse-dealing, taking up manure agencies, etc. Proceedings of this kind are, of course, ruinous to anything like keeping genteel society. I feel certain it is the poverty of the profession which is its bane, and leads to all, or nearly all, its social ills. A short time since you published a letter showing that veterinary surgeons so far forgot the profession as to ride as troopers in Yeomanry Regiments; and the reply was that veterinary surgeons could not afford to become officers. I myself have seen some of the vendors of our drugs and chemicals sit and dine with the members of our profession at some of the best meetings we have ever held. If the work of a veterinary surgeon were at all profitable, would a gentleman of Mr. Banham's position be discussing blacksmiths' shops, and whether one shilling per set of shoes is sufficient remuneration?

As a science, I claim that ours is one of the highest and most interesting, as it is also, in my opinion, the most difficult to master and become proficient

in; but from the poverty of its practitioners it does not, nor will it ever, equal in standing that of the legal or medical professions; and from this same cause few men of rank will join it to practise in the provinces.—Apologising for trespassing on your valuable space, COUNTRY PRACTITIONER.

A DISCLAIMER.

SIR,—I beg to say that the letter headed "The Army Veterinary Department," and signed J. F. Oliver, M.R.C.V.S., London, which appeared in the January number of the Journal, is not mine, nor do I know who wrote it. I venture to trouble you with this, as I have received communications attributing it to me. G. A. A. OLIVER, A.V.D.

The usual quarterly meeting of the Lancashire Veterinary Medical Association will be held at the Blackfriars Hotel, Manchester, on Wednesday, March 14th, when Mr. Tedbar Hopkin, F.R.C.V.S., will read a paper on "Roaring." Tea at 5 p.m.; business at 6. ARTHUR LEATHER, *Hon. Sec.*

ANSWERS TO CORRESPONDENTS.

A. L. S.—1. The disease is not the same as Anthrax, being due to a different kind of bacillus, and manifesting itself, clinically, in a different fashion. It is now usually known as Symptomatic Anthrax. 2. We believe it is not included with Anthrax in the Contagious Diseases (Animals) Act.

READER.—The details of the change will be given in the new Register of the R.C.V.S.

Communications, Books, Journals, etc., Received.

COMMUNICATIONS have been received from F. Duck and F. Smith, A.V.D., Aldershot; J. Cammack, Kimberley, South Africa; R. W. Burke, A.V.D., Jubbulpore; J. Donaldson, Pottie, Paisley; R. Shenton, Belper; F. L. Gooch, Stamford; J. Armstrong, Penrith; F. P. Eassie, York; A. M. Creighton, Lisburne; J. G. Rutherford, Manitoba; J. F. Winchester, Boston, U.S.A.; "Fortior"; A. Leather, Liverpool; T. Greaves, Manchester; A. Robinson, Greenock; J. S. Gould, Tunbridge Wells; A. E. Macgillivray, Banff; Sir F. Fitzwygram, Havant; F. Raymond, A.V.D., Woolwich; E. W. Hoare, Cork; Messrs. Arnold and Sons, London; Professor Limont, Glasgow; W. Penhale, Barnstaple; "Country Practitioner"; G. A. A. Oliver, A.V.D., Woolwich; A. L. S.; "Reader"; A. W. Hill, London; H. F. Greenhalgh, Leeds; S. Villar, Harrow, London; J. Matthews, Edinburgh.

BOOKS AND PAMPHLETS: *A. C. Cope* and *Victor Horsley*, Reports on the Outbreak of Rabies among Deer; *J. J. Lupton*, The Recent Outbreak of Rabies among the Deer in Richmond Park; Bulletin et Memoires de la Société Centrale de Médecine Vétérinaire; Annual Report of the Massachusetts Cattle Commissioners for 1887; Recueil des Memoires et Observations sur l'Hygiène et la Médecine Vétérinaires Militaires; Report of the United States Commissioner of Agriculture for 1886; *Sir James Paget*, The Morton Lecture on Cancer and Cancerous Diseases; *E. Dele*, Exportation de Betail de la Belgique; *Ed. Dele*, La Pleuropneumonie à Borgerhout.

JOURNALS, ETC.: *Journal of the National Agricultural Society of Victoria; Revue Vétérinaire; Lancet; Recueil de Méd. Vétérinaire; Hufschmied; Journal de Médecine Vétérinaire; American Veterinary Review; American Live Stock Journal; Wochenschrift für Thierheilkunde und Viehzucht; Repertorium für Thierheilkunde; Live Stock Journal; Mark Lane Express; Echo Vétérinaire; Edinburgh Medical Journal; British Medical Journal; London Medical Record.*

NEWSPAPERS: *Cheshire Chronicle; Cheshire Observer; Brooklyn Daily Eagle; Woodstock Weekly Sentinel-Review; Baltimore Weekly Sun; Baltimore Sun; Cambridge Chronicle and University Journal; Middlesex and Surrey Express; Limerick Chronicle.*